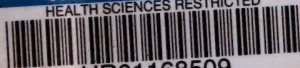
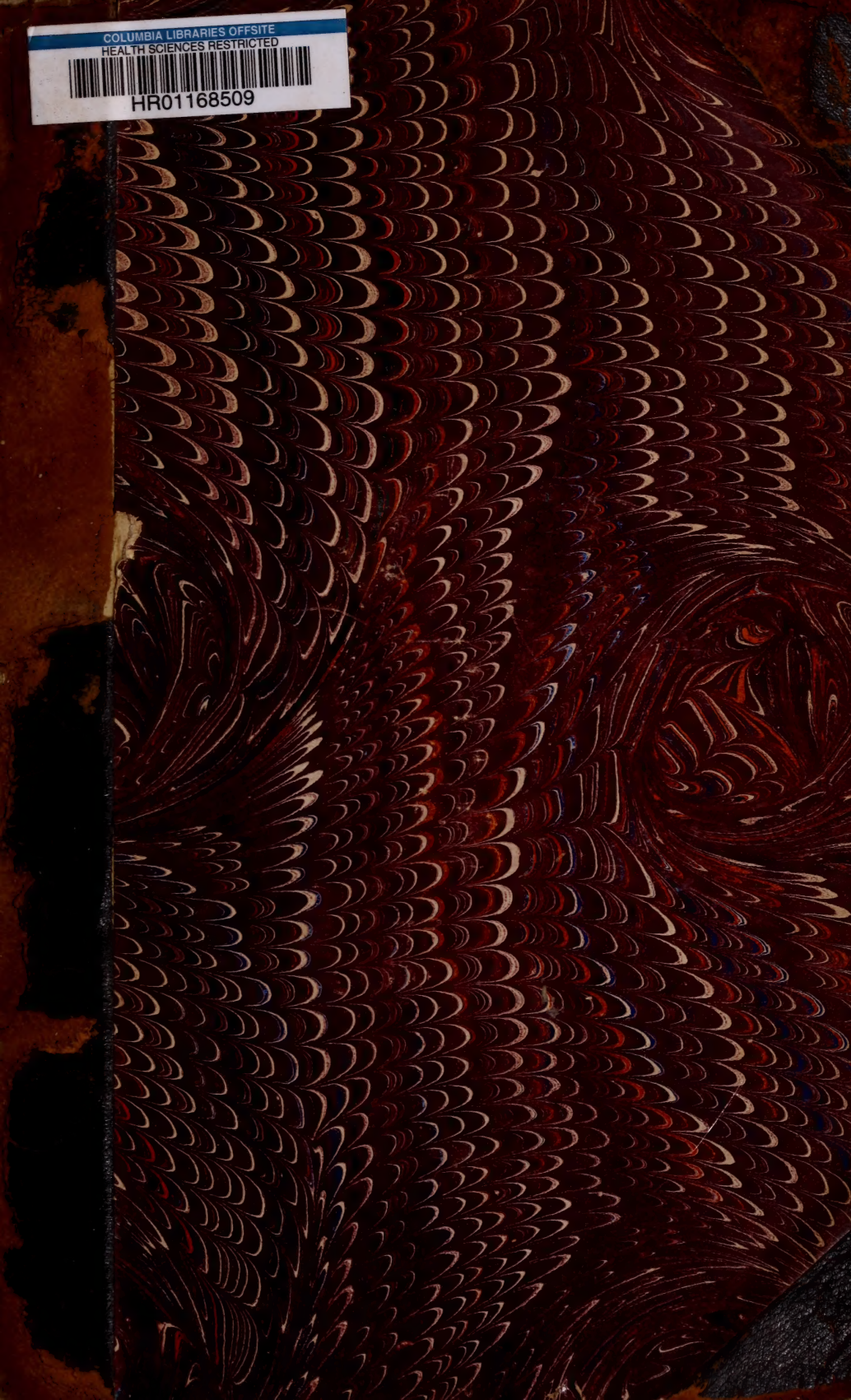


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OHIO
STATE JOURNAL
OF
DENTAL SCIENCE.

EDITED BY
GEORGE WATT, M. D., D. D. S.
XENIA, OHIO.

VOL. V.

PUBLISHED MONTHLY BY
RANSOM & RANDOLPH,
TOLEDO, OHIO.

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OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. V.

JANUARY 1, 1885.

No. 1

Contributions

"A word fitly spoken is like apples of gold."—SOLOMON.

HEAT AND COLD IN THERAPEUTICS.

BY HORACE BONNER, A.M., M.D.

[Read before the Xenia Academy of Medicine.]

MANKIND, from the earliest infancy of the race, seems to have been impressed with the idea that cold and heat possess decided therapeutic properties. In very early times the sick and afflicted were taken to the temples for the "gods" to cure, and we can understand some of the wonderful "cures" reported when we know that the patients were first subjected to baths, cold or hot, in which "frictions and other manipulations," probably similar to those of the Turkish bath of to-day, were used. And when the "oracle" directed for one attacked with pleuritis, that "the warm ashes from the altar be mingled with wine and applied to his side," we feel inclined to give the "oracle" credit for some medical knowledge and skill. The early Brahmins frequently prescribed cataplasms and the warm bath, and in beriberi the sand-bath. The prophet Elisha prescribed bathing in the river Jordan for the leprosy of Naaman, the Syrian general, and Isaiah

cured King Hezekiah of an abscess by a poultice of figs. Hippocrates employed fomentations to favor expectoration, and used emollient cataplasms in certain other cases. In the treatment of wounds he was accustomed to use cold or hot applications, according to the indications. Asclepiades made use of the shower bath, and often prescribed cold baths and affusions of cold water. The great physicians in Rome were, for the most part, keepers of baths, and doubtless adapted, as they thought, the temperature of their baths to the conditions of their patients. Antonius Musa, the freedman of the emperor Augustus, is said to have cured his master of a serious disease by the use of the cold bath, and in return therefor was richly rewarded by the grateful emperor and by the senate.

Among all the ancient physicians the use of cold and heat was quite common, and there is good ground for the belief that, even in those early days, there existed in every village the traditional "old lady," and that her brain was just as fertile in the concocting of ridiculous and disgusting poultices as is that of her sister of this more enlightened age; and we can all testify of her ability in that direction. The domestic practitioners of to-day have great faith in the therapeutical properties of cold and heat. Abscesses of all kinds are treated with hot poultices. For "cold on the lungs" nothing is so good as a "hot onion poultice." The hot foot-bath is a frequent prescription. Dry, hot flannels are "good for neuralgia," and also for the baby's colic. When any one is burned or scalded, the injured part must be exposed to as great heat as the patient can bear, "to draw the fire out." The cold compress is the universal prescription for headaches. Cold spongings are used to reduce the temperature of the feverish. In incised or lacerated wounds, sprains or bruises, hot or cold applications are made according to the fancy of the one prescribing.

By far the greater part of the profession have always been accustomed to prescribe these agents only empirically. Perhaps it would be no exaggeration to say that the greater part of them still do so. It is but a very few years since we heard a professor of surgery, one with a fine reputation as a teacher, in one of our reputable medical colleges, instruct his class that "the *only* guide to the use of hot or cold applications must be the feelings of the patient." We are willing to admit that there may be cases when

this seems to be the most practicable rule ; but we do not admit that it is the only, or even the best one. Recent medical literature throws considerable light upon the physiological effects of heat and cold ; and by studying these effects we hope to gain at least a glimpse of a principle which, in the fullness of knowledge shall lead us to scientific accuracy in the use of these agents, powerful for good or evil. In the preparation of this paper we were not presumptuous enough to even hope that our efforts would throw any new light upon this subject. Our aim has been simply to tell what others have done ; and we shall be abundantly satisfied if we are able to present, in a logical connection, some of the discoveries that have been made by clinical and physiological observers. We have thought better to consider the two agents together, for in action they are nearly related, in some cases producing similar effects, in others antagonistic. Water is the means usually employed for the application of cold or heat, hence we shall, in this paper, frequently refer to the effects of baths, cold and hot, general and local.

“Cold baths increase the oxidation of tissue, and thereby act as a stimulus to nutrition. They increase the flow of urine. Reflexly they may relieve congestions, and inhibit pains. They act as a tonic to irritably weak nerve centres, by thus relieving congestion, improving nutrition.”—Prof. C. S. Dana, *Med. Rec.*, vol. 24, p. 61.

“On entering a cold sea-bath there is at first a sensation of depression, great or little, according to the coldness of the water. The skin becomes pale and shrivelled, and presents the familiar appearance called ‘goose skin,’ a condition produced by the contraction of the skin, and the consequent protrusion of the hair roots and follicles. There is general shivering, some blueness of the lips, nose, and extremities, considerable reduction of the temperature of the skin, quickened pulse, convulsive and sobbing breathing as the water rises to the chest, especially when the bath is entered slowly. The system soon becoming roused to meet and to resist the depressing effects of cold, in a few seconds a feeling of general exhilaration ensues. The skin becomes ruddy and glowing ; the breathing full and easy ; the pulse rather quick and strong ; the spirits exalted, and the bather feels increased vigor, both of mind and body, * * * * for, whilst taking the bath, and probably for some time afterwards. oxidation of the

tissues is increased, the blood is purified of effete products, and the processes of construction and destruction of tissue, on which vigor of both mind and body depends, are intensified."—Ringer, 7th edition, pp. 39, 40 and 41.

If the bather leaves the bath now, before the state of exhilaration ceases, the condition lasts for several hours, showing that the bath is a decided tonic. If, however, he continues in the bath, "depression again comes on. The bather feels cold, shivers, becomes blue and numb in the more exposed and smaller parts, whence, on account of their size, warmth is more readily withdrawn, and he is seized with a sensation of depression and wretchedness. * * * * For many hours after the bath he complains of general languor, with a repugnance to exercise, whether of body or mind; his temper is fretful and morose, the circulation feeble and languid, with sinking at the epigastrium, loss of appetite, chilliness of the surface, and cold extremities. * * * * If the exposure in the cold bath is continued beyond this point, or if the cold is severe, the effects become more manifest, great depression and a sensation of utter misery set in, followed shortly by heaviness and drowsiness, which deepen sometimes into coma, till a kind of apoplectic state is reached, then asphyxia and death from paralysis of the muscles of respiration."—Ringer, 7th edition, p. 40.

The effects of heat on the body are, to a great degree the opposite of cold. "By surrounding the body with a temperature higher than its own, the destruction of its tissues by oxidation is considerably diminished. Moreover, experiment has shown that increased heat impedes or destroys the electric currents in the nerves, whence it may be fairly presumed that when subjected to this influence, they are less able to conduct impressions either to or from the brain. * * * * The general warm bath, if not too hot, is at first highly pleasurable, but if unduly indulged in, throbbing at the heart and in the large vessels soon comes on, with beating in the head, and a sensation of oppression and anxiety. These sensations however, when perspiration breaks out, greatly diminish, or altogether cease; but if the bath is continued too long, the foregoing uncomfortable sensations return, accompanied by great prostration, even to the extent of fainting; the pulse becomes greatly quickened and enfeebled, while the temperature of the body rises very considerably, and, if the heat of the

bath is great, may reach even to 104°F., and that is, to a severe fever height.—Ringer 7th edition, p. 55.

“Warm baths relax the blood vessels, weaken the heart-beat, increase diaphoresis, lessen the amount of urine passed, and act sedatively upon the nervous system.”—Dana, Med. Rec. Vol. 24, p. 61.

“Schüller has demonstrated by physiological experiments performed upon rabbits, that the action of a full cold bath is to dilate the blood vessels of the *pia mater*, contraction occurring only after a long application of the bath, and then from the blood being cooled down. The full warm bath causes powerful contraction of the vessels of the *pia mater*, often preceded by a transient dilatation.”—Med. Rec. Vol. 23, p. 593.

The most thorough study of the effects of cold and hot applications to the spine has been made by Dr. Chapman. Regarding the effects of cold applications he says, “I have proved, by numerous experiments, that cold applied to the back exerts not only a sedative influence upon the spinal cord, but also on those nervous centres which preside over the blood-vessels in all parts of the body. The *modus operandi* of this influence on those centres, and its effects, may be thus stated: “1st. It partially paralyzes them. 2d. By means of the partial paralysis thus effected, it lessens the nervous currents in the vaso-motor nerves emerging from the ganglia or the nerve centres acted upon, and stimulating the muscular fibres surrounding the arteries influenced. 3d. By thus lessening those currents it lessens the contractile energy of the muscular bands of the arteries to which those currents flow, and by doing so, facilitates the dilatation of those arteries themselves. 4th. By thus inducing the condition of easy dilatability in the arteries acted upon, it enables the blood, which flows in the direction of the least resistance, to enter them in greater volume, and with greater force, than before.”—Ringer, p. 77.

Claude Bernard found that, when the cervical sympathetic was divided, the vessels of the parts which this nerve supplied became dilated, and received an increased amount of blood. Dr. Chapman says, “Those phenomena which Prof. C. Bernard produced in the head of an animal by section of the cervical sympathetic, I have induced in the head, thorax, abdomen, pelvis, and four extremities of man, by the application of ice to the different parts of the back.”—Ringer, p. 79.

Concerning the physiological effects produced by heat to the

spine, he says, "1st. The temperature of the sympathetic ganglia being raised, the flow of blood to them becomes more copious, and the functions consequently become more energetic than before. 2d. Their nervous influence passes in fuller and more powerful streams along the nerves emerging from them, and ramifying over the blood-vessels which they control. 3d. The muscular bands surrounding those vessels, stimulated by this increased nervous afflux to contract with more than their usual force, diminish proportionably the diameter of the vessels themselves. 4th. The diameter of the vessels being thus lessened, the blood flows through them in less volume and with less rapidity than before: indeed, it is probable that, while the nervous ganglia in question are made to emit their maximum of energy, many of the terminal branches of the blood vessels acted upon, become completely closed."—Ringer, p. 79.

A very careful study of the local effects of hot and cold applications has been made by Dr. Emmett of New York City. In his work on gynecology, chapter eight, under local treatment, he says, "The sympathetic nervous system presides over nutrition and the sexual organs, and every blood-vessel, to the minutest capillary, is covered by a net-work of its filaments, communicating directly with the ganglia. When nutrition is impaired, the blood-vessels lose their tone, and dilate for want of a proper nerve stimulus. * * * * * It is only by exciting reflex action through the nerves that the vessels can be made to contract, and as nutrition improves, a permanent improvement in their tone follows. We have three agents for exciting reflex action, viz: electricity, cold, and heat. Electricity exerts a decided effect during the time of the passage of the current, but the impression is transitory, and the agent is only to be relied upon as a valuable adjuvant to other measures. Cold is a prompt excitor of reflex action by which the vessels are made to contract, but on reaction taking place, the parts will become more congested than before, both the arteries and veins being distended. Heat, unless at a temperature that would destroy the parts, does not act as promptly in causing this contraction as either electricity or cold. In fact its immediate effect is to cause relaxation, and to increase the congestion of the parts; but if its application be prolonged, reaction ensues, and contraction takes place; in other words, the reaction from heat is contraction. Under the increased nerve stimulus the capillaries are excited to contract, this effect extend

ing also to the coats of the larger vessels, and as the calibre becomes smaller the congestion is diminished. * * * * The hands and arms of a washerwoman, when in hot water, become swollen at first, from the increased flow of blood to them; but it is a well-known fact that they afterwards become markedly shrivelled. Placing the hands in cold water, at once causes the skin to shrink; and the blood-vessels are stimulated to contract, but we know that reaction comes on promptly, and a larger quantity of blood returns to the parts than was driven out. But after soaking in hot water, the skin does not recover its natural color for hours, since the capillaries remain contracted. In their return to the natural state the reaction does not go on to a paralysis of over-distention, and hence there is no subsequent congestion. The immediate effect of cold upon the capillaries, therefore, is contraction, and with reaction comes dilatation; but the reverse is true of heat, which causes, at first, dilatation, followed by contraction."

But in what does it benefit us to be all-wise in whatever pertains to physiology, if, when we stand by the bedside of a patient, we are powerless to relieve suffering. A physiological truth is but half discovered, if it do not suggest something for clinical use. In studying the febrile condition we find that, "the symptoms common to all fevers are due simply to the elevated temperature of the body, whilst the characteristic symptoms are due either to the specific poison, or the inflammation. This increase of temperature affects the organs in a twofold manner; in the first place it perverts, depresses, or, if the rise is very high, abolishes function; and, in the second place, produces fatty degeneration, or, as it is termed, parenchymatous degeneration of all the tissues."—Ringer, p. 49.

If this be true we would logically expect, the temperature being decreased, to find the perversion of function checked, or, at least, lessened, and the process of oxidation reduced to the norm. The effect of the cold bath is to lower the temperature; and, "Ludwig and Schröder find that this treatment of fevers greatly reduces the quantity of carbonic acid exhaled by the lungs, and the solid constituents of the urine, and thus lessens tissue change."—Ringer, p. 54.

Indeed intelligent practitioners all over the world can testify from clinical experience to the excellence of this treatment of high temperatures. Again, the febrile condition is sometimes

caused, especially in children, by an hyperæsthetic state of the nervous system, or a condition of exalted functional activity; and this condition of nervous erethism sometimes exists without the increased temperature. In both instances we would expect the warm bath to be of much benefit, for it produces diaphoresis, and "impedes or destroys the electric current in the nerves," and renders them "less able to conduct impressions to or from the brain," and we know, empirically, that we would not be disappointed in our expectations. Of the tonic action of cold and its *modus operandi* we have already spoken.

If the observations of Dr. Chapman be correct, and he and many others claim to have confirmed them by clinical observations, there are, perhaps, no two agents so universally appropriate in the treatment of diseases as cold and heat. To even name the diseases in which they would be beneficial would far exceed the limits of this paper. Indeed whenever it may be necessary to increase or decrease the afflux of blood to any of the organs of the body, we ought to find the application of cold or heat to the appropriate part of the spine to materially assist the treatment. Diseases of the respiratory, digestive, nervous, and reproductive systems immediately suggest themselves. And some of the most careful clinical observers say the treatment is not disappointing. Some in this society can testify to the happy effect of heat to the spine in bleeding from the nose, or from the lungs. For controlling hemorrhage in external wounds, cold has, in times past, been resorted to almost exclusively. Of late years, however, hot water has been found to answer the purpose much better in most cases, and is now used by many of the best surgeons. It should be applied as hot as can be borne, and the application continued until hemorrhage has ceased. Hot applications are not nearly so apt to be followed by secondary hemorrhage. Remembering the observation of Dr. Emmett that, "the immediate effect of cold upon the capillaries is contraction, and with reaction comes dilation," but that heat "causes at first dilation followed by contraction," the reason is sufficiently obvious. But it is in the various stages of inflammation that cold and heat have been most used, and perhaps been most misused. With the ordinary routine practitioner the custom is to poultice a boil or a felon, as soon as diagnosed, "to draw it to a head;" and to apply cold water to an inflamed wound, or a sprain, "to keep down the inflammation."

Why one inflammation should require heat and the other cold, it never occurs to him to ask himself or any body else. In the establishment of the inflammatory process there is (1) a determination of blood to the part, (2) congestion, (3) inflammation proper. Our friend, and esteemed member, Dr. Watt, in his "Chemical Essays," has, with characteristic clearness, defined these terms thus: "When there is an increase in the quantity of blood in any part or tissue of the body, with increased motion of it through the vessels of the part, the phrase, *determination of blood*, is used to express the condition. When there is increased quantity of blood in a part, with diminished motion, the condition is called *congestion*. When there is increased quantity of blood in a part, with increased motion in some of its vessels, and diminished, or obstructed motion in others, the condition is *inflammation*." In speaking of "cold applications to aching teeth," he says, "determination of blood and congestion may be overcome by a persevering use of cold; while in inflammation, a treatment directly opposite is often indicated."

Dr. Hunter of New York City, says,—Med. Rec. Vol. 26, p. 397, "In the earliest stages of inflammation the prompt abstraction of heat often suffices to abort or control the inflammatory process. After inflammatory changes have taken place, the application of heat to the same part may, by stimulating capillary and lymphatic action, hasten absorption and be eminently proper." We believe the rule given by these gentlemen to be our best guide, if we keep in mind the facts upon which it is based. Cold produces immediate contraction of the vessels, thus relieving promptly a "determination of blood" to a part. In the same way it will relieve a congested part, though less rapidly. In these conditions when the vessels have been made to contract, the pathological state is removed, and the "reaction of dilatation" is not productive of evil effects. But congestion may in some instances, be more easily and permanently removed by hot applications. This seems to be decidedly the case in the congestion of the various parts of the mucous membranes, in which the hot water treatment has been remarkably successful, when properly applied. When, however, the process of inflammation is established, stasis having taken place, and the subsequent effusion of inflammatory products into the surrounding tissues, the contraction produced by cold is inadequate to remove the pathological state, and the

reaction from it augments the evil already done. In such states heat, with its "reaction of contraction," is the proper application.

With all these facts before us, it must be evident that in no case is it a matter of indifference whether heat or cold is applied in a given pathological condition. These agents are powerful for evil, as well as for good; and as such they should be used with due care and circumspection. We do not wish to be understood as advocating heat and cold as "cure-alls." But, properly used, they are powerful adjuvants in the treatment of a large number of diseases. It should be remembered, however, that while the diseases, for the treatment of which they are appropriate, are many, the pathological conditions are few. And while in many cases it may not be at first at all clear which should be used, careful and proper study of the case will almost always enable us to decide correctly.

DENTAL PROSTHESIS.

BY DR. E. J. WAYE, SANDUSKY, O.

THE word prosthesis, according to Webster, signifies in surgery, "the addition of an artificial part to supply a defect of the body."

The term while not critically correct as applied to dentistry, is sufficiently so for our present purpose, since it describes, in a striking manner, much of the dental prosthesis of the present day, the "supply" being so very extensive as to suggest the conclusion that an addition, rather than restoration, was the object sought, and that to present the appearance of being all teeth is to be preferred to that of having none.

It is claimed by the older members of the profession, that the dentures of thirty years ago, ere rubber as a base, or teeth in sections, were invented, were more natural in appearance, more useful for purposes of mastication, and more worthy of the name "prosthetic," than are those made at the present time.

Now if this statement be true, and not the idle vamping of men who, having outlived the old methods and materials, are now instituting unpleasant comparisons with the new, it is matter for serious consideration. Unfortunately for the credit of the profes-

sion, it is not alone the older dentists, who are deploring the decline of the prosthetic art. Reports of the various dental societies throughout the land, show conclusively that in the judgment of their leading men, this art has reached a very low standard of excellence. They earnestly deplore it, and urge that measures be taken whereby it may be placed alongside the splendid attainments of the operative department. Another fact which may be taken as an indication of its status is, that many dentists are quite reluctant to confess that they do anything but operating; and if, perforce, compelled to plead guilty to a small amount of rubber work, it is done with a deprecatory tone and manner which would seem to imply that, though by circumstances obliged to employ their odd moments in an occupation so little in consonance with either their taste, abilities, or inclinations, that whenever possible the uncongenial labors of this department, which by many is believed to be of sufficient importance to demand a distinct education, and peculiar aptitude for its successful practice, is promptly relegated to the office boy, the plate scourer, or the student, (synonymous terms usually), as being altogether unworthy the attention of him who excels in the operative department.

While so many in the profession are deploring the decline of true prosthesis at the present time, very few, it would seem, truly understand the causes which led to it, or the means by which it may again be restored to its former position in the estimation of the more intelligent men in the profession. And yet these causes are easily found. They exist in every dental workshop where vulcanite and section teeth constitute any considerable portion of the business. And it was the invention and introduction of the latter which marks the decline of true dental prosthesis.

With the invention of section teeth, the necessity for taste, skill and judgment on the part of the dentist, no longer existed. Or if it did, it could not longer be exercised.

Why study expression, and nature's methods, when, by no possibility, could those methods be followed?

Whoever has observed the endless modifications which exist in the arrangement of the natural teeth, also the wonderful variety of expression, resulting from these modifications, has not failed to perceive that, to reproduce in artificial teeth, every shade and variety, which we behold in nature, must, of necessity, require long and careful study of the methods of arrangement.

The exquisite adaptation of shape necessary to give the right expression to each and every form of features, and that nice discrimination in color, which will give to each varying temperament its appropriate hue. All these and more, are indispensable to him who aspires to the name of prosthetic artist, and all these essentials, if not practically ignored, by the ordinary mechanical dentist, in his hands, are, at best, but a wretched caricature, and a disfigurement of the "human face divine."

With the introduction of section gum teeth, all necessity for a study of nature's methods ended. The manufacturer assumed the role of artist, and placed upon the market such forms of teeth as he deemed would be most acceptable to the mediocre dentist, a name which represents a large majority of the profession who practice the mechanical department. This sounds harsh but it is true, nevertheless, and must, of necessity, remain so while section gum teeth, as at present made, are in universal use, as will be seen.

Under the old methods, and when each tooth was constructed separately and singly, and as a consequence admitted of any change, either in position or otherwise, the study of expression became an important factor. And as the only guide and teacher, in this most essential part of the work, was to be found in nature—the divine exemplar, supreme and unsurpassable, in whose productions are seen every conceivable variety of form, color, arrangement, and expression, ever varying, and ever new, the dentist of that period could hardly fail to become somewhat of an artist.

Some latitude at least, was permitted, for the exercise of whatever artistic skill or ability he might possess; and if he studied at all, his models were the highest.

To so arrange a set of teeth that each tooth should occupy its proper position, implied a knowledge of arrangement, which, if possessed, could end only in disgust, when the same result was attempted by using sections of gum teeth, for without a remedy, of what benefit is the knowledge of error? With section gum teeth there can be but little change in their position. You may, it is true, push slightly out, or in, the end of the section containing the canine tooth, and even that, at the risk of irregularity of surface at the joint, and that is all. The question of a correct arrangement of teeth for any, and every, style of face, temperament, and expression, was settled in the workshop of the manufacturer; and what is left for the dentist is, to grind the joints.

Had the object of the invention of section teeth been to bring into the profession a horde of mere mechanics, (many of them hardly entitled to that appellation), men without genius, culture, intelligence, or education, and to drive out those who possessed all these, together with years of experience, it is doubtful if any more effectual method could have been devised. At all events, it has succeeded; and as the result, we behold, on every hand, artificial section teeth whose even surfaces, regular forms, and horse-shoe arcs, are so very similar, as to suggest,—what indeed is not very far from the truth, that like hats, and shoes, they vary only in size, color, and length.

Natural teeth vary in size, shape, color, and especially in arrangement. In no two mouths can you find two sets precisely alike. They vary; and as these variations do not occur in the same teeth, but in any or all, it is clear, that teeth made in sections, rigid and unchangeable, cannot imitate the natural ones.

“To obtain the best results,” said the lamented Buckingham, “we must not use sectional blocks,—we must have single teeth,” and every true dentist who understands nature’s methods will say amen!

It is one thing to understand the cause of an evil, and another to remedy it.

The introduction and use of section teeth have driven out the Prosthetic Dentist, and reduced what was an art, to a mere trade. The question now occurs, how shall the trade be again elevated to an art? The mechanic to an artist?

This is a question not so easily solved. Could we, with the experience of the past, and the present increasing culture in art, wipe out of the profession the joiners of section teeth, that large class which look to the artificial tooth maker, rather than to nature for their method of arrangement. Could we separate the two departments, giving to each its appropriate studies. Could we, in our institutions of dental education, make the studies in the two departments as distinct and separate as are the requirements for their practice, the one being medicine with mechanic art, the other mechanics and art. Could we so educate the coming dentist, as that he shall possess the ability to instruct the manufacturer of artificial teeth, rather than, as now, to accept, in submissive ignorance, whatever that individual, from either a selfish or pecuniary interest, chooses to foist upon him, content to

remain in ignorance of nature's methods, if thereby he may be released from all incentive to thought, all emulation toward excellence. When, in fine, the profession as a whole, shall become so thoroughly educated as that each and every individual, in each of its departments, shall fully comprehend what its intelligent practice demands of him, and with that knowledge shall conscientiously endeavor to attain to it, we may hope that prosthetic dentistry may reach a position of which none need to be ashamed.

“SUCCESS.”

BY DR. H. H. HARRISON, CADIZ, O.

I PRESUME there are but few persons, if any, just entering upon life work, who have not a proper and laudable ambition to make their lives and callings a success; and yet we would timidly suggest, from open indications and final results, that the efforts made by some have been very feeble or mingled with many adverse circumstances.

Most of us, I think, when looking back over the past, can say with the poet Moore:

“ This life is all chequered with pleasures and woes
That chase one another like waves of the deep.”

But, I think, we can safely say, that the sweetest pleasures and the grandest results that have been ours, are those that have cost much labor, anxiety and sacrifice to obtain them. Indeed, there is no excellence without great labor. And, therefore, if we would fain hope for good results, we must put our shoulder to the wheel, and bend our every energy in the proper direction.

To be successful in life is to make the most of it that can be made. To be successful in business means the same thing. But there is such a variety of opinion as to what is the ultimatum of success, that we are almost ready to say that whatsoever the aim, if carried out as designed, is a success. It certainly is so to some extent, and yet not necessarily or always so; for I may commence the practice of dentistry with a very low aim, and even accomplish more than I had expected, and still fall very short of being a success as a dentist.

In the eyes of very many, and especially the business world,

no man makes a success unless he has accumulated a neat little fortune in ready cash. Now this of course, is a financial success, but it may have been gained at a great sacrifice of principle or manhood.

In our profession there are two objective points which should be kept steadily before us, each one of them having tributaries which are important attributes in making up the final results.

In the first place, we each have a part to act in the drama of life. We conclude that we will play our part in the dental profession; and now our souls are filled with the enchantment of doing something to leave our "footprints on the sands of time," that future generations may say: "His life was full of worth, and he has left a goodly inheritance, whereby the world has been bettered by his having lived in it."

By becoming thorough in our professions, by being gentlemanly, and having each a "big heart," by accomplishing everything that is required of us as dentists, by our profession, by being honorable, honest and just, we are certainly entitled to the credit of having been a success professionally. This is the one objective point. Now, together with the above, if we have accumulated enough of financial wealth, at the age of sixty, to feel that we are not dependent on our dental profession to make our daily bread, but feel that we have enough and to spare, we have then gained the other objective point.

These two points, for us, are all important, and I would emphasize this, for we find so many of our professional brethren that have accomplished the first, but have failed in the second, pointing to us very clearly and forcibly, that we lack as a profession in business or financial tact. And I am led to believe it has its explanation in the fact that we are defective in our business education, and this leads me to say that the great tendency is to rush into our profession before we are prepared for the life of a professional.

But, having put our hands to the plow, we may not look back, only to give our experience to those who are to follow us. But the rather let us look forward and remedy all that may not be too late.

We may have passed the meridian of our lives, and be descending toward the horizon of our professional existence, having faithfully performed our duty; and if we have been

better to others than to ourselves, let us take consolation from the Scriptures, that "it is more blessed to give than to receive."

But to those of us who are only in the zenith of our lives, let us look up and around, and gather into our storehouse treasures new and old, for we can fully realize that our profession is one of rapid advancement, and if we would be abreast of the times, we must not fold our hands and slip away the hours of our usefulness while there are such precious gems to be found in the mines just before us. We must not be satisfied with ease and rest, but look high, think deep, and work hard, and success will be ours. We are not yet at the top of the professional ladder, for—

"There are other towers for thee to build;
There will be other steeds for thee to ride—
There will be other legends, and all filled
With greater marvels, and more glorified.

"Build on and make thy castles high and fair,
Rising and reaching upward to the skies;
Listen to voices in the upper air,
Nor lose thy simple faith in mysteries."

SWAGING PLATES.

BY HASKELL, CHICAGO.

IN a previous number, having given instructions as to the use of Babbitt metal for dies, allow me to say a few things about the swaging of plates.

In the first place *oil* your dies so as to prevent, as much as possible, the adhesion of the base metal to your plate.

If it be a gold plate, 20 carat, guage 28 "standard," is suitable for the majority of cases. If it be a partial upper, clasp plate, a narrow plate doubled one-half its width, will be more than twice as strong as a single thickness, twice as wide. Your plate should always be made of pure gold, alloyed with pure copper and silver; always avoid platinum (except for clasps or backings), as it makes a hard and springy plate and difficult to swage, and is never necessary as sufficient additional strength can always be had by *doubling* the plate around weak points. Your plate should be *soft* and is then easily fitted to the gums.

Anneal and always dip in acid to clean, so you may see, after swaging, if any metal has adhered from the dies; if so wipe off and anneal again, twice is usually enough. Use the horn mallet, and if full plates, the *lower* bending pliers (on the upper and lower plates) to partially shape.

In full upper, after forming as far as practicable with the mallet and bending pliers, cut in front, from the margin to the edge of process, *lap*, and after swaging, solder. It saves much time and labor often, and increases the strength of the plate at its weakest point, and to it there is no possible objection.

In swaging a partial lower plate, make it in two pieces, each passing back of the front teeth to at least one-quarter inch beyond. After swaging each separately, swage the two together, and solder. It will be well to have one wider than the other, and then lay the solder upon the overlapping edge. These partial low edges should always extend up on the necks of the teeth, at least one-eighth inch, this will allow of a wider plate for strength, as it is so often the case the plate cannot be worn sufficiently low without interfering with the muscle and loose membrane. Always use solders of same fineness as plate.

Editor's Specials.

"Write the Vision and make it plain."

ONE-NESS OF PURPOSE.

ABOUT 1831 we got our first sight of an illustrated almanac. It has been said that first impressions are lasting. While indulging a revery in reference to the various modes of conducting dental journals at the present time, one illustration in this almanac is vividly recalled.

At the date referred to, high and sharp-cornered shirt-collars were the style, and these were encased in bulky and very long neckties, fastened with wide, double-bow, knots. A large boy, with neck thus dressed, is met by a smaller and plainer one. With a look of intense admiration, the small boy exclaims: "Why! good gwacious, Jem! What a tie!" The reply of the larger boy is pictured as if he were afraid to open his mouth lest

he might disarrange the tie, but he replies: "Yes, Fred, I 'spec it am rayther exquisit; but yer see I gives my whole mind to it." In after life we never placed much reliance on divided attention.

Lately, in the management of dental periodicals, there is something of a tendency to a rather numerous body of editors. Perhaps the same tendency is manifested in the management of professional colleges. In some the effort seems to be to secure as many teachers as pupils; and after all, if they would take special charge of a pupil apiece, the effort of each to excel the others might give good results. But it is of the periodicals that we now wish to speak. Not long ago one had nine associate editors or co-workers. (We got into a snarl by trying to be witty with the magical number, suggesting a K-nine and B-nign, but not quinine editor. We'll not do it again, for we fear it hurt their feelings). Our late favorite, the *New England*, probably had several editors. The *Independent Practitioner*, if our memory is not at fault, speaks in the plural, when referring to editorial work on it, and intimates that *they* are without compensation other than that afforded by a satisfied conscience.

The *Archives of Dentistry* seems to have adopted the song of the old sexton, "I gather them in, I gather them in," as it refers to its editors. If its whole editorial force should undertake to review an article, or a man, there would be no escape, for they would look from all directions, and discover all deformities and imperfections. We should feel frightened at the thought of such a possibility, were it not the fact that we have felt and acted so kindly toward all the *Archives* brethren that we know, and have tried to go it *blindly* in our distribution of friendship to those of them we don't know, that we do not think it possible for any of them to feel unkindly toward us, and certainly none of them will attack us for mere amusement of themselves or others.

Our new exchange, the *Southern Journal*, has followed the new style, and, at the recent rate of increase, it will soon have editorial force from every village in the land, and even from some of the cross-roads. But the more the merrier—and the better, too, provided the material is good and all do full duty. There is an advantage in having a numerous force, well distributed. All are more or less influenced by pride of place. A dentist might feel like subscribing for the OHIO JOURNAL, the

Register, or the *Cosmos*; but the Distributed Dental Drill Directory is publishing the Dental Canthooks, and one of the editors lives right in our town, and, of course, we must patronize *our own* periodicals, and home talent.

But after all, this multiplicity of concentrated talent has its drawbacks. One balky horse spoils a team. When all act in concert a general effort may result in grand success. But if one, two, or three of them feel out of sorts, they make no effort, but rely on their co-workers, and soon each one of a dozen is depending on the other eleven to do their own work and his too. And in such cases good work is seldom done. A young man hired his own father to board his horse for the winter, while he went to school. In the spring the horse was very thin. He explained that his father would tell Bill to tell Jack to tell Charles to tell Isaac, that it would be proper to give that horse two ears of corn; and when he got them it was considered well and good, and when he didn't get them, matters were quite as satisfactory.

We have often wondered how we would feel with a dozen co-editors. We think we prefer good contributors. We are forced somewhat into self-reliance.

But there is still another difficulty in editing some of our professional periodicals. In some instances the editorial work is necessarily regarded as of secondary importance. One has a professorship—had two not long ago. At least one more is in the same category. Another has a very heavy responsibility as a business man; and he is not alone in this respect.

We confess that we have a somewhat contented feeling in regard to the OHIO JOURNAL, in spite of our editorial loneliness. Our physical indisposition prevents our getting to the dental meetings to get sharpened up, and to get essays and other papers for publication. This is a great disadvantage; and our good friends ought to remember that we would be on hand if possible, and they should, therefore, see that our proportion of the papers read are referred to us.

But, after all, we have one very decided advantage, the same that Jem had in reference to his necktie, we give our whole mind to it. Our attention is not taken by office practice, nor by lectures. We read and talk, and think, and work, all with reference to the usefulness and welfare of the JOURNAL. The energy, good taste, and efficiency of our publishers relieve us of all care as to

the outward appearance of the JOURNAL. And so, we can not help but regard ours as a pleasant editorial position. If all our friends would rally to the JOURNAL, and give it a greatly increased circulation, our publishers would doubtless improve it if possible, which we would be glad to see. But we can't complain of them. Yet we make an earnest appeal in their behalf to have a larger circulation for the JOURNAL. They deserve a much larger patronage.

JOURNALISTIC PROGRESS IN DENTISTRY.

WE are not able to recall the exact appearance of the earliest issues of the *American Journal of Dental Science*, the one with which the renowned Chapin Harris was so long connected. It was a neat quarterly; but we do not now remember the number of pages contained in a single issue.

The *Dental Register* we took from its first existence, even though we then made no pretensions toward dentistry. We felt that a better knowledge of the teeth and their diseases would be useful to us as a physician. And we gained great advantage from the *Register*, even though its existence was according to "the day of small things." And from the experience thus gained we are able to intelligently advise, and accordingly we do recommend physicians, especially if young and in small towns or villages, to take and read at least one dental journal. Of course we think the OHIO JOURNAL will best suit them, but others may answer.

But to return: It is known by very many of the older dentists in the West that the *Dental Register* was started by the Mississippi Valley Association of Dental Surgeons. The Association appointed the editors, and assumed the expense of publication. We are not quite sure, but believe that the editorial force labored without pecuniary compensation. Dr. James Taylor, of sacred memory, was each year, one of the editors. We are just now absent from our files of the *Register*, and write wholly from memory, but we believe it was at the meeting of the Association, in 1853, that Dr. Taylor was requested to accept the periodical as his own property, and to edit and publish it according to his own pleasure, a committee of the Association having audited the reports of the Treasurer and the Committee of Publication,

giving the opinion that the *Register* had become self-supporting. At this, or more likely at the next meeting, Dr. Taylor was requested to enlarge the periodical, and agreed to do so, but reminded the members that they must rally to his assistance, or it would not be possible to get material for its pages when thus enlarged, as he had found it difficult to secure suitable matter for the limited space it had previously contained. And we heard him make personal and individual appeals to members of the profession, in and out of the Association, expressing a good degree of anxiety in reference to the matter. Fortunately, as we heard him state afterward, his appeals were not in vain, as he had found it quite as easy work as to edit the smaller size.

Bear in mind that at this time the *Register* was a very small quarterly, and that there were, perhaps, but two other dental periodicals to be found in the profession.

On comparing the matter then in the journals with that found now, we find no falling off or deterioration in quality; and to realize the progress in this respect, we must take into consideration the increased number and size of the periodicals issued, and the fact that most of them are now issued monthly instead of quarterly.

When Colonel Jno. T. Toland, on consultation with its editors, concluded to make the *Register* a monthly, and so announced, Dr. Taylor said to the writer of this that the experiment would prove a disastrous failure; that the dental profession had never enjoyed a monthly periodical, and was not ready for it. He didn't believe we could find material at all suitable to fill its pages, and he was exceedingly sorry to see a periodical, on which he had bestowed so much labor, thus destroyed by what he regarded as a reckless experiment.

We might have stated that when Doctors Taft and Watt enlarged the *Register*, in 1856, it being then a quarterly, Doctor T. and others felt and said that we had made a sad mistake, and for reasons similar to those given against its monthly issue.

But our experience, and we believe Dr. Taft will ratify the statement, was that these enlargements caused no difficulty in the editorial work; for the profession seemed to be ripe and ready for them. The increase of space suggested to each subscriber and reader that he could have space to report his "interesting case," or to set forth his peculiar views, or to reply to a commu-

nication which he regarded as unsound in whole or in part. And even now, with the increased number of periodicals, there seems to be no unusual or unprecedented difficulty in obtaining material to fill their several pages. The younger men in our profession have been trained to express thoughts in writing to an extent unknown in the early days already noted; and even the older practitioners have been aroused, and give us the results of their experiences and meditations much more readily than they did a quarter of a century ago. We think the ability to write has increased more rapidly in our profession than the disposition to read, yet each has had a rapid and healthy growth.

It may be that we now have too many periodicals. That is a question not easily determined. If editors and those in the profession who can and ought to contribute to our periodical literature do their duty in full, the number will be found none too many. The quality of the journals is a more important matter than their number. So late as this in the afternoon of the nineteenth century, no dentist should think of resting content with the reading of but one journal.

THE WAY A NEWSPAPER LOOKS AT IT.

SHORTENING A JAW—A DIFFICULT SURGICAL OPERATION NOW BECOME OF COMMON OCCURRENCE.

A number of years ago there lived in Wheeling a certain Dr. Hullihen, who became famous as a surgeon. Some of his operations were very brilliant and decidedly awe-inspiring among the common people. One case in particular was thought to be unparalleled at that time. A young lady belonging to one of the best families in Eastern Ohio was terribly disfigured by a protruding lower jaw. Hearing of Dr. Hullihen's skill as a surgeon she prevailed upon her father to let her go to Wheeling and see if anything could be done to improve the shape of her face. She went alone, and nothing was heard of her for two weeks, except that she arrived there safely.

One evening, as the shades of night were gathering, a really handsome lady drove up to the gate in front of the farm house and asked if she could get lodging for the night. The well-to-do farmer said they did not keep a hotel; besides they were expect-

ing their daughter home at any time, so they could not keep her. She said she guessed she would stay any how, and hopped out of the buggy. The farmer thought she was an escaped lunatic, and was about to shut and lock the door in her face when the house dog came along and recognized the lady as his young mistress.

It was impossible to satisfy her parents and sister of her identity, so remarkable was the change in her appearance. In her pocket she had two sections of jaw bone, each containing three teeth, which explained how the change had been made. The operation is quite common now, but at that time it was rare. In this case there were three more teeth on either side of the lower jaw than usual, and as they grew they caused the jaw to project forward. At birth the lower jaw was but little longer than the upper one. The surgeon merely resected the jaw on both sides by cutting out a section on either side containing the extra teeth, cutting out one in front to make the jaw narrower and bringing the ends of the bones together. It was simple enough, but the country people lay awake of nights thinking about it.

Another young lady who, when a mere child toddling around, had her neck badly scalded by pulling the coffee pot off the breakfast table, and afterwards carried her head greatly to one side, went to see the doctor. Without so much as asking her consent he severed the contracted muscles; snipped a piece out of her shoulder, fitted it in, tied up the wound, and told her if she would hurry she would catch the next boat for home.—*Pittsburg Despatch*.

SOME of our older readers of the JOURNAL can remember the late Doctor Hullihen. And, if our memory is not at fault, both the operations referred to in the above newspaper paragraphs, were described minutely in the *American Journal of Dental Science*. Dr. Abram Robertson who was some time with Dr. H., said that much of this surgical reputation was due to the talent and skill of a local surgeon, who was somewhat eccentric, and not successful in gaining a liberal patronage. Others maintained that a part of his fame rested with Dr. R. himself, who was an expert in devising and making the necessary apparatus for adjusting and holding in place the parts involved in the operations. But genius is generally criticised, and applause is given grudgingly. It was pretty evident that Dr. H. was a surgical genius; and we believe time has not clouded his fame.

It is needless to say that the operations are far from correctly described in the newspaper article. The "three more teeth on either side of the lower jaw than usual" is a phrase found in the writer's imagination. And in the plastic operation, the patient didn't take the first boat home.

When Robert Burns saw a louse on the bonnet of a finely dressed young lady at church, he prayed, in her behalf, for the ability to see ourselves as others see us. By an occasional item from the laity we may find out how they see us, or rather, what they think of us.

Probably a majority of dentists now in practice have not before heard of Dr. Hullihen. Such is fame.

BRAVE?, OR FOOL-HARDY?

BRAVE DR. RABBETH.

Does any one ever hear of a medical man who lacks courage? There is a sad story in the newspapers to-day of a doctor's gallantry and devotion. A child at the Gray's Inn Road Free Hospital was suffering from diphtheria, and the operation of tracheotomy was performed. In order to remove the matter that had accumulated in the child's throat it became necessary to suck it through a tube, and this was done by the senior medical officer, Dr. Samuel Rabbeth. The Doctor, however, caught the disease, and, we regret to say, died last night a victim of a noble and courageous sense of duty. Such acts are fortunately not rare in our hospital wards and infirmaries; but they assuredly deserve some recognition when they are recorded. Most men—most Englishmen, at any rate—we suppose are not deficient in a certain kind of physical bravery; but the bravery required to charge a battery of machine guns, or even what Napoleon called "the two o'clock in the morning courage," which he claimed and which his enemies denied him, might fail before such an ordeal as that incurred by the young medical officer. Dr. Rabbeth, it appears, was only in his twenty-eighth year.—*St. James' Gazette*.

WE are heartily tired of paragraphs like the above. In reference to Dr. Rabbeth, we would adopt the latter term of our query-caption, were it not for that fearful sentence, "*De mortuis*

nil nisi bonum." Nothing about the dead unless good. That is, say nothing. But it is as bad to lie about the dead as about the living. We do not know the authorship of the Latin sentence, nor on what authority it rests; yet it is very generally obeyed.

Within a few years we have noticed several accidents similar to the above, if accidents they may be called. Why is it necessary to suck the poison from the larynx or the trachea, by the lips of the operator? All that can render it so is the lack of due preparation for the operation. What would be thought of the surgeon who would amputate without instruments and ligatures to take up and tie arteries? The surgeon about to perform tracheotomy is under as much obligation to have instruments ready to suck out matter, blood, or mucus. And there is no lack of suitable instruments, and if there were, it would be a work of but a few minutes to make an instrument much better adapted to the purpose than are the lips of the operator. The common small dropping tube would answer, and have the advantage that the one applying it could see what he was doing, which is not the case when he relies on his lips.

But right here the general practitioner will do well to draw on the dental surgeon. He has adopted the dental engine, with circular saws, burs, drills, etc., attached, and now uses it with as much satisfaction as though he had invented it. He takes to it quite as kindly as he does to anæsthesia, and so let him take the saliva pump of the dentist; or, if it is not at hand, let him heat over a common lamp, a small piece of glass tubing and attach it to a hollow rubber ball, and thus he has at once an instrument that will blow out or suck in as he may desire. His outfit of surgical instruments is incomplete till he has an instrument of the kind at hand and always ready for use. We admire true courage, and believe it is often the duty of the physician to take serious risks to save the life of his patient, but in these days of improved instruments and appliances, it is not necessary for him to suck diphtheritic poison from the opened trachea of a patient. If he has no instrumental substitute for his own lips, the dentists will furnish him one.

Said the dentist: "No doubt without pain 'twill come out."

Said the man with a grin: "That remark is tooth in."—

Druggists' Circular.

A LITTLE MIXED.

ON page 602 of the December number of the *Items of Interest*, is an article headed "Laughing Gas and the Ohio Dental Journal." And it has a sub-head of "Report of the Ohio State Journal." We were puzzled, and feared we had written something while sleeping. But a kind letter from the editor of the *Items*, etc., helps our understanding of the matter. His heading should read, "Ohio Dental *Society*," not JOURNAL. Then it is the "Report of the Ohio State Journal," correctly stated, for that is the name of a Columbus newspaper. And the article, about which we care but little, is an account of Dr. Horton's speech in favor of referring the case of Drs. Warner and Gares back to the Committee of Ethics. Dr. H. had his subject well in hand; and as it was or appeared to be very carefully written out, the newspaper reporter had but little difficulty in getting a full synopsis of it. We have no disposition nor occasion to re-open the discussion of the case. It seemed to be pretty well understood by most of the members present, that the Society was on its last pins, while Dr. H. was making his eloquent speech. We don't recollect that the Society gave any expression of its views on the subject of laughing-gas, as the amended heading of the "Items of Interest" might indicate; and we hope and desire that no one will regard the remarks that appeared in our namesake newspaper as our own. They may be good in their way, but they are not in line with our thoughts. We have, for the first time, found that our name is unfortunate, and fails to designate.

DISEASE GERMS.

THE ASTONISHING INVENTION OF A PHILADELPHIA DOCTOR.

IT requires a first-class microscope to find bacteria—and, dissenting scientists claim, a first-class imagination also. Bacteria are alleged to be the germs of disease, and the German doctor who discovered them has been hailed as one of the greatest benefactors of mankind of this generation. A Philadelphia doctor now claims that he has invented a trap in which he can capture these infinitesimal germs as flies are caught in a fly-trap. This

curious contrivance is the invention of Dr. W. H. Webb, of North Sixteenth street, who has upon many occasions in the dead hours of the night tested it in the streets, and has captured enough of these deadly germs to show that we breathe anything but a healthy atmosphere. He recently obtained permission from the Mayor to set his trap in the gallery of a crowded hall, and the result was appalling. He declines to explain the details of his invention in advance of the publication of an article upon the subject, which he is writing for a medical journal. As soon as this appears he purposes to send specimen traps to prominent European and American scientists, so that the value of his discovery may be fully tested.—*Philadelphia Record*.

REMARKS.—The above is an illustration of the hold the bacterial question has of the popular mind. In our childhood, boys and girls, in groups, went to the fields and woods in search of curious insects. The exercise was popularly called "bug-hunting." We are likely soon to have similar efforts after smaller game. What could be more enjoyable in a society of young men and women than bacterium socials? A good microscope, with a good light accompanying, will constitute an outfit. And there will be the satisfaction of an abundance of game. We never could endure angling, because the fish would not bite without bait; and even with bait, sometimes they would not bite for a half minute. Get a trap and catch game enough for a bacterial supper at the next church social.

WHO ELSE HAS TRIED IT?

A NEW ANÆSTHETIC SUCCESSFULLY TESTED.

NICHOLASVILLE, KY., Dec. 3.—Hydra-chlorate of Cocaine was successfully used to-day by Dr. John S. Welsh on the eye of Joseph Marshall, who has had a piece of steel in his eye over eight days. Dr. Welch found only two drachms in Lexington, where the physicians had never used it. Six drops on the eyeball kept it deadened half an hour after the foreign body was removed. A two-per-cent solution was used.—*Cor. Com. Gaz.*

A drowning man catches at a straw; and it may be the above is only a straw. But as dentists gave anæsthesia to the world, anything relative to it is supposed to interest them. Be-

sides, no other class of men so frequently inflict pain; and few others inflict such severe pain. This fact ought to be a reason why they should grasp at any thing that is likely to lessen the amount of pain they cause. If this agent is so efficient on the eye, it may prove equally so on the teeth. If it will not lessen the pain of extraction, it may ease painful pulps, or sensitive dentine.

TYPOGRAPHICAL ERRORS.

THESE annoy us exceedingly sometimes. In the December number, the able article of Dr. Douds is sadly mutilated. It so happened that we could not send him a proof without delaying the JOURNAL; and now we wish we had delayed it. To begin with, his name is wrong. Read A. J. not A. T. But we could not tell by his manuscript the J. from the T. The Doctor prepares beautiful copy; but it is so finely written that it is in places difficult to decipher. Often, but not always, the sense guides correctly, yet in proper names no such aid is afforded.

In the fourth line of his article, "mineral" should read animal.

On p. 563, 2d line, the semicolon after "compensated," should be after the following word, "for."

On p. 462, middle paragraph, "regions" should read rugous; and "fitted" should be pitted.

And an author quoted is Witthouse and not "Wilthouse," but the Doctor's l's and t's are much alike. And another author is Zencke and not "Beucke."

Sometimes we get vexed with the mistakes of the printers, and again we wonder that they do even so well. It often happens that copy is left very indistinct, which the writers would often see by a careful revisal. But in spite of the mistakes, Dr. D's article is very enjoyable and instructive.

HOT AIR AS AN AGENT IN THE TREATMENT OF DEVITALIZED TEETH.

AMONG some waste paper we found two loose leaves of the *Herald of Dentistry*. We can not fix the date of the issue, and

will remark that these leaves were not found in our own waste basket, but the following article, entitled as above, attracted our attention, and we wish to make it the basis of a few remarks on the same subject. We do not think that hot air as a therapeutic agent, receives as much attention as its merits call for from either the dental or the general surgeon. After reading the admirable article of Dr. Bonner in the present number, this may be read with profit.

The warm air syringe has never yet reached a reputation level with its great utility, but in the nature of things, its popularity will wax and wane, and as with the advancing waves of the incoming tide, its influence will rise higher with each fresh impulse. But this implies that the instrument is to be greatly improved in comparison with that in the present market. And in this connection it may be mentioned that the first one ever made was much neater and better adapted to the objects it was to accomplish than anything of the kind to be now found for sale. With the cylinder only gently warmed, the surface of dentine could be burned to the whiteness of lime, and dead, soft tissue could be changed to animal charcoal, or even burned to ashes, and all this while the naked thumb and finger could remain in contact with the cylinder. In using it for such purposes, a very fine, minute platinum point was used, and of course it needed to be held to a definite place to gain such results. Heated a little hotter, such exactness was not necessary. This instrument was exhibited at a meeting of the American Dental Convention, at Hope Chapel, New York, in 1856, however, without its finer points, having only a coarse silver one, as the others had been left at home by oversight, which, after all was fortunate, as we never saw the instrument since.

With this instrument we burned to charcoal minute portions of pulp, or membranous tissue in the canals, when it was not practical to remove them; and we seldom had trouble resulting from such cases. Often, too, in cases of sensitive dentine, we suddenly burned the surface to whiteness, and found complete relief from the annoyance. And in these operations and experiments, we labored under a great disadvantage on account of the difficulty experienced in keeping away the buccal fluids. That instrument, in connection with the rubber dam, would have been a treasure too precious for estimation.

We used it, too, in the treatment of aphthous ulcers, where they were large, deep, or from any cause difficult of cure. By drying the surface with a soft napkin before using, we could then cauterize the surface of the ulcer to whiteness, without causing as much pain as the application of nitrate of silver or carbolic acid, and we thought we had more satisfactory results.

In chronic alveolar abscess where the discharge of pus was slight but persistent, we think we often dried up and thus destroyed the pyogenic sac, as the term was then used; but with the clumsy instruments now for sale, who could think of such application?

The general surgeon should have and use the instrument in the treatment of foul, indolent ulcers. And it is quite possible that, by the use of the Hydrochlorate of Cocaine, referred to on another page, its application may be rendered painless. But without an anæsthetic the pain is not great.

A satisfactory precedent for this treatment occurred, in early times, in this immediate vicinity. From the window where we write, we can overlook the site of the extinct "Old Chillicothe," the chief town of the Shawnee Indians. A member of that once powerful tribe remained in the vicinity, after his brethren had departed. A man had a "fever sore" on his leg. He applied to the Indian to cure it, after repeated failures elsewhere. With proper assistance, the patient was staked down to the ground, with much palaver, and after some noisy and mysterious incantations, the Indian took a large coal of fire and laid it on the ulcer. He turned his back to the patient and went on with his ceremonies, till he thought "time was up," when he kicked the coal away, saying "now only burn; burn get well."

But we have promised our readers an article, and in the fragmentary condition we find it we are not aware of its authorship, nor are we so familiar with the editor's style that we can safely impute it to him. But here is the article on which we have tried to found the preceding remarks; and on a more careful reading we are inclined to think it emanates from the pen of the editor. Each reader can judge for himself. If our files of the *Herald* were at hand we might look up the article; but let it, as it is ever best, be estimated by its merits and not by its authorship:

HOT AIR AS AN AGENT IN THE TREATMENT OF DEVITALIZED TEETH.

In the treatment of devitalized teeth, the prevention of the formation of septic gases, and their removal and expulsion from them where formed, are two important subjects, and ones that have not been given more than their share of attention, so far as means and mode of treatment are concerned. As it is well known, almost all the diseases, characteristic of devitalized teeth, are due to the gases generated by the devitalized organic material in the dental *canaliculi*, and perhaps some portion of the pulp left in the canal; the accumulative presence and pressure of these gases on the membrane outside of the root, either through the apical foramen or the dental *canaliculi*.

A large portion of the devitalized teeth, treated and filled so far as total extraction of the pulp is concerned, especially in molars and thin rooted bicuspid; the work in a majority of cases is imperfectly performed. The palatine root, in most superior molars, can be thoroughly treated, but the buccal roots being in character dangerous to drill to any great extent, which all must have at some time learned, by trespassing upon forbidden ground and the thin fiber of pulp in the end of them generally impossible to wholly remove. These facts are here stated, notwithstanding so many dentists have for years, and are forever continually writing and stating at society meetings, that they drill out and fill all roots, and that all must do likewise. Not accepting this position, but maintaining that the pulp canals of many teeth are impossible without great risk to drill out, and consequently are, more or less, imperfectly filled, and the apical foramen is not closed.

In those teeth in which a portion of pulp has been left in the canal, or in cases of putrescent pulp of chronic character, the whole dentine seems to be completely saturated with both septic gases and matter, and relief in an acute case of pericementitis, or threatened alveolar abscess, is its removal to some extent and the application of sedation, and disinfectant agents, and to this is here added, as an agent, hot air. In cases of putrescent pulp, or ones in which the pulp canal has been imperfectly treated in opening up the roots, the greatest of care must always be exercised to avoid forcing, in any way, matter or gases up or through the foramen; for if such is the case, serious results are apt to

follow. Endeavor to draw and work all gases and matter downward, by instruments and suction, from a pin-pointed syringe; and water, when used, should not be squirted with great force at the first sitting.

The main body of the pulp cavity in the crown and roots, as far as advisable or fancy leads the operator, must be thoroughly opened. If easy of application the rubber dam can be applied, the cavity carefully washed and dried, then a current of hot air is introduced, so hot that the finger cannot be comfortably held against it, as it leaves the syringe. The crown and roots, by this process are heated far above a normal degree; in fact to those not having tried it, it is quite surprising to see to what an extent a patient can bear a tooth heated without pain or inconvenience. By this means the gases from the heat expanding leave the porous dentine, and pass out with each blast of the highly heated air. To what a wonderful degree it is effectual, the first case of putrescent pulp will fully convince the operator if his face happens to be on a line with the air and gases as they leave the tooth, especially when the tooth is heated to the required degree. After the first treatment with hot air, the application to the heated dentine of whatever agent as a disinfectant, his experience best dictates should be made. *Permanganate of potassa* is at present a favorite one although tinct. of iodine has much to recommend it as a disinfectant, besides its other well known properties. Creosote or carbolic acid should not be applied at first. After again syringing and drying out the cavity, a second or even third application of heat and disinfectant can be made at the first sitting, and the dental *tubuli* disinfected at once, thoroughly and effectually.

In comparison with the old method of simple application, the manner in which the remedial and disinfectant agents are absorbed, will convince the operator, who will test this mode, of its practical value as a system of treatment. At some subsequent sitting time, as the case may indicate, carbolic acid or creosote may be applied. In pericementitis and threatened alveolar abscess, hot air will be found as a prompt and effective agent in their treatment, by immediately relieving the dentine of gases, and facilitating the use of sedative agents, which the heated, dried out dentine, will so much more thoroughly absorb and therefore be more immediate in action and effect. In the admin-

istration of hot air for disinfectant purposes, the Codman & Shurtleff valve bulb syringe is the best at present in use, but can be much improved for this purpose in style and point, or different points; also the wooden socket is apt to charr in heating, where a high temperature is required.

MAGNETIZED WATCHES.

SOME time ago we described a singular accident to a watch. While calmly lying under a pillow, its mainspring snapped into a number of pieces. We solicited light on the subject; and found a few weeks afterwards the following paragraph, which by accident escaped further notice till now. Dr. Betty, of the *Dental Register* found and reported the same, or something in the same line. That number of the *Register* is not at hand. The paragraph we refer to is as follows:

“A scientific jeweler says that fine, sensitive watches are particularly liable to be affected by electrical atmospheric disturbances. During the months of June, July and August, when these phenomena are most frequent, there are more main-springs broken than during all the remaining months of the year. They break in a variety of ways, sometimes snapping into many pieces. It is also said that since the introduction of the electric light has become so general, a large number of watches—some of them very fine ones—have become magnetized. While in this condition they are worthless as time-keepers.”

In the same line of thought is a short article in the *New York Tribune* for January 2nd, 1884. It will be read with interest by thinking dentists, for such are expected by their patrons to be up with the times in general sciences. And besides, the question of electricity in its relations to dentistry is not yet solved. One of our early articles that reached our periodical literature was entitled “Intrastomatic Galvanism.” When it was written, in the shape of an inaugural address, it was our hope that greater attention to electricity would be given by the dental profession. The *Tribune* article suggests the presence of electric influence where but little, if at all suspected; and it may be that dentists will find it in unthought of places. For example, we have several times seen teeth filled partly with tin, with gold well condensed

over the tin to finish the filling. In many of these cases no trouble was noticed, or at least none was attributed to the presence of the two metals. In others, however, great distress resulted, which could be relieved only by the removal of the filling. In some of these cases we hired the patients to let us refill the cavities again and again, severe distress "worse than pain," as the patients generally said, resulting whenever the two metals were used as above described, with no discomfort whatever when but one of the metals was used.

How are these exceptional cases to be explained, if we are not allowed to suggest a difference in the electric conditions. But the *Tribune's* article is as follows:

"QUEER FREAKS OF WATCHES.—THOUSANDS OF MAIN SPRINGS
BREAKING WHEN THE AURORA BOREALIS APPEARS
—EFFECTS OF DEMAGNETISM.

"Decidedly watches are queer things," said D. H. Hopkinson, of *The Jewellers' Circular*, seated in the easy chair of his editorial sanctuary. "They possess some unaccountable peculiarities. For instance, some time about the beginning of last summer, when there had been a succession of fine displays of the aurora borealis, it was estimated that in a single night in the city of New York the main springs of not less than three thousand watches broke. The estimate is based on actual inquiries. Fine sensitive watches are particularly liable to be affected by electrical atmospheric disturbances. During the months of June, July, and August, when these phenomena are most frequent, there are more main springs broken than during all the remaining months of the year. They break in a variety of ways, sometimes snapping into as many as twenty-seven pieces.

"It is a fact that since the introduction of the electric light has become so general a large number of watches, some of them very fine ones, have become magnetized. While in this condition they are useless as time-keepers. This defect used to be considered incurable, and because of it thousands of watches have been thrown away after much money had been spent on them in vain attempts to persuade them to keep good time. Among the methods resorted to were washing the parts in garlic juice, refin-

ishing and passing them through the fire. But all these devices were entire failures, or only in part effective. I know of a man who had a fine and valuable movement which kept excellent time. He transferred it from a silver case to a second-hand gold one. Immediately it lost all its characteristics of steadiness and reliability, and, in fact, did not keep time at all. When replaced in the silver case it kept good time again. The owner, a jeweler, puzzled himself and experimented in vain to discover the cause of this strange partiality on the part of his watch for silver. At length he sent it to an expert. He discovered that the lifting-spring of the gold case had become magnetized. On substituting another for it, the watch kept as good time in the gold case as in the silver case.

"There are occasions when it is a very serious matter to have your watch magnetized. The most striking instance in point is one which lately came under my notice. Captain W. R. Smith commands the steamer Delaware, which plies between New York and New London. Before putting to sea on a recent voyage he was invited to inspect an electric light dynamo machine and examined its parts closely. Soon after getting on board the steamer he observed that the compass became strangely affected when he approached it. Whether he stood on the right or the left, or immediately in front of the compass, the needle would invariably point to him. The compass was worse than useless when he came near it. It was dangerous and might wreck the ship. You can imagine that this phenomenon alarmed and puzzled Captain Smith not a little. At length he recalled his visit to the dynamo machine and the true solution of the eccentric behavior of the needle flashed upon him. His watch had become magnetized. When removed it the needle resumed its constancy to the polar star. On his return to the city he took his watch to Mathey Brothers & Mathey, who demagnetized it for him. This firm has invented some machine, the mechanism of which is a secret, by which they demagnetize a magnetized watch speedily and effectually. They get watches sent them from all parts of the world to be thus treated.

"Watches frequently get magnetized in iron mines or in machine shops, where they are incautiously brought near swiftly running belts. I knew a workman who used to hang his watch between the parts of a running belt. He expended a small fortune on main springs.

"It is a well-known fact among horologists that no watch will keep the same time with two people. The cause has not yet been definitely ascertained, but it would seem that in some mysterious way a watch is affected by the temperament of the wearer. The mere physical differences in gait and movement between different people is not sufficient to account for all the variations that have been observed."

It may interest some to know something further in reference to the watch with the unlucky main-spring.

In the afternoon preceding the breaking of the spring, we were watching two small clouds heavily charged with electricity. They were low, and small, one north and the other south of us. We stood in front of our residence with the watch in one hand, a small steel hammer in the other. A bolt, apparently from the northern cloud, divided, a part going to the other cloud, and a part striking a house a few yards south of us. We received a decided shock, and ever since, the watch stops frequently with the second hand parallel with and under the hour hand. When wound up so that the spring exerts its full force, the hand is often carried past the other. In general all the steel in the watch seems to be magnetic.

The hammer, also, failed to make a good escape. Ever since it will pick up a carpet tack, and hold it erect, so that it is conveniently set where wanted, when a blow readily drives it home.

All this may seem very unlike *dental* science. But to make our profession what it ought to be, and what it must become, we shall have to draw on all classes of science.

Correspondence.

"I charge you that this epistle be read."

IRREGULARITIES OF THE TEETH.—A CASE IN PRACTICE.

BY GEORGE W. KEELY, D.D.S., OXFORD, OHIO.

THE case here illustrated is that of a man aged 33 years, who came to me in June, 1883. Six months before this time he first discovered the point of the right cuspid appearing through

the gum. The second bicuspid and first molar, as also the second bicuspid, on the left side, had been extracted years before. The first bicuspid was standing one-eighth of an inch from the lateral incisor. This was a mere shell, which I treated and filled ten years ago, when I told him he was quite sure to get the cuspid which was due him; and its eruption had been retarded by reason of the crowded condition of his teeth. He promised to come to me on its first appearance, but failed to do so. Had the bicuspid been a live tooth, and in good condition, an effort would have been made to move it back, to allow the delayed and refractory cuspid to be drawn in place. It was extracted, and the posterior part of the root of the cuspid could be seen, almost to its apex. I am now convinced that the cuspid would have made its appearance sooner, and in its normal position, had I extracted the dead bicuspid at the time it was filled.



Figure 1.

In figure 1 is shown a model of the mouth, after the bicuspid was removed. A vulcanized plate was fitted to the roof of the mouth, with a brace around the second right molar, and one in a gap between the first and second molars, on the left, for the purpose of retaining the apparatus firmly in place. A strong ligature was cut from rubber tubing, put over the erupting cuspid, and carried back and attached to a button made on the plate, opposite the buccal portion of right molar. As the removal of the bicuspid left such a large opening just where we wanted the cuspid, fears were entertained that it would be drawn back too quickly; but in this we were mistaken. A ligature was also

placed on the first molar, and carried to the cuspid, for a double purpose, as we wished to draw the molar forward to help fill up the gap, and make it antagonize with the lower one.

My patient lived in the country, and it was not convenient for him to call as often as I wished, so he was instructed to remove the apparatus daily, and cleanse his teeth and the plates, and adjust the ligatures, a supply of which I gave him.

It required nearly three months to draw the cuspid back where its point could pass out between the cusps of the inferior bicuspid.

At this time it was our purpose to make a new plate, and adjust a jack-screw, which was not admissable before, for want of space to operate it. The apparatus was removed, and for a temporary purpose, (as my time was limited), a bar was cut from a piece of compressed pine, beveled in the centre, and placed firmly against the left bicuspid, and pressed firmly down to the margin of the gum. I did not see him again for several weeks. In the mean time he made a new bar when necessary, and the work was progressing so well I allowed him to finish it in this way, which was done in about eight weeks, as shown in figure 2.



Figure 2.

A retaining plate of black vulcanite, with a bicuspid tooth to fill the remaining gap, was adjusted, fitting very firmly to the cuspid, forcing it out still further, and it is still worn with comfort.

The cuspid looks much better now that it is fully developed, than in the cut, which was taken before the retaining plate was

made. No attempt was made to rotate it, the point being shaped as the one on the left. The cutting edge of this tooth was moved just *three-fourths of an inch*; and the second molar one-fourth. The right lateral was moved out of a slight lock, by the pressure of the cuspid.

During the time he used the pine bar, it was removed during meals, and while singing in the choir at church. He now has a fully developed cuspid in place, his personal appearance, as also his enunciation, is greatly improved; and there can be now no tangible reason why he should longer remain a bachelor.

Societies.

"Wherewith one may edify another."

THE OHIO STATE DENTAL SOCIETY.

NINETEENTH ANNUAL MEETING IN COLUMBUS, OCT. 29 AND 30, 1884.

THE Society met in the Board of Trade Room, City Buildings, Wednesday morning, at 10 o'clock. President, A. Berry; Secretary, J. H. Warner; Treasurer, Geo. W. Keely.

After prayer by Rev. G. W. Lincoln, of St. Paul's Episcopal Church, Columbus, and the transaction of some routine business, the Society adjourned at 11 o'clock, to allow the Board of Trade to occupy the room. About 25 members were present, and during the meeting the attendance averaged 30.

AFTERNOON SESSION.—WEDNESDAY.

On the recommendation of the Committee on Membership, the following persons were elected active members: L. J. Mitchell, D. D. S. of Delaware, O., B. R. Taber, D. D. S. of Bowling Green, O., A. O. Howe, D. D. S. of Washington C. H., O.

A letter was received from Alex. Campbell, of Saronas Ferry, B. C., requesting membership in the Society. Referred to the proper committee.

Dr. C. H. Land, of Detroit, Mich., was accorded the privileges of the meeting.

DR. H. H. HARRISON made a motion giving the Secretary the custody of all essays read during the meeting. This led to a highly personal debate between the Secretary and several of the members, and ended in a motion to lay on the table, which was carried.

On motion, Dr. W. P. Horton read the report of the Committee on Dental Law, which was, on motion, received, and is, in part, as follows :

Gentlemen of the Ohio State Dental Society:

At the last session of the meeting of this Society in 1883, on motion of Dr. J. Taft a special committee of five, on Dental Law was elected, with myself as chairman, and Dr. A. F. Emminger, Geo. W. Keely, J. H. Warner, and I. Williams, as the members.

For some unaccountable reason, the Secretary failed to record this action in the minutes of the Society, although it was so reported in the daily papers and in some of the dental journals.

The Secretary also failed to notify me, as is required by parliamentary usage, of the appointment of myself and others on that special committee, with instructions as to duty required, so that whatever action your Honorable Body might have taken by way of instructions as to the labor to be performed by said special committee on Dental Law, it never came to hand. In the absence of such instructions, I did not deem it best to call the committee together, as they were widely scattered over the State, and large expense of time and money would necessarily be incurred by the meeting, without being able to accomplish anything definite.

I have, therefore, to repeat that there has been no meeting of the members of your special committee on Dental Law; and as a consequence no progress has been made by them as such.

However, as a member of the committee, as recognized by your worthy Secretary, and at the request of other members, both of the committee and of the Society, I have to report that I had consultations with several members of the present Legislature of both political parties on several occasions, and from what they informed me I was of the opinion that there would be no possibility of getting any special legislation of the kind talked of by members of this Society. * * * * *

W. P. HORTON.

To settle the dispute between the Secretary and Dr. W. P. Horton, as to what became of the papers read at the last annual meeting, a special committee was appointed, consisting of Drs. A. F. Emminger, H. A. Smith and Frank A. Hunter. They too meet with the Committee on Publication and Dr. Horton, and report their decision Thursday morning.

On motion of DR. TAFT, that part of the resolution of suspension, passed at the last meeting, giving Drs. Warner and Gares until the last day of this meeting to make acknowledgment or be expelled, was rescinded.

Also, on motion of DR. TAFT, the matter was now taken up.

DR. FRANK A. HUNTER, of Cincinnati, thought we should have our fight out now and be done with it. During the past four years we have always had a quarrel on hand between some of the members of the Society. Thought the lessening attendance at the meetings might be attributed to this cause.

To bring the matter to a decision, DR. TAFT offered a motion to rescind the resolution of expulsion.

At the request of DR. F. H. REHWINKEL, the PRESIDENT called on Drs. Warner and Gares to say if they were ready to make acknowledgment.

DR. R. G. WARNER: I must refuse to be catechized by the whole Society. Dr. Gares must speak for himself.

DR. W. L. GARES agreed with Dr. Warner. Was willing to appear before the Committee on Ethics.

DR. F. H. REHWINKEL made a motion that Drs. Warner and Gares be expelled, having refused to comply with the resolution.

DR. C. H. JAMES, of Cincinnati, proceeded to show that the parties were still defiant, and had again violated the code of ethics. [Dr. James read several advertisements of defendants in the *Daily Ohio State Journal*, of Columbus, twenty days after the last annual meeting.]

Some objection was made to new evidence being brought before the Society in an irregular manner, but it was allowed as showing the animus of the parties.

DR. W. P. HORTON, of Cleveland, wanted the whole matter referred back to the Committee on Ethics, because the whole proceedings, both of the committee and the Society were irregular and void. He then read a long argument in support of his position.

The PRESIDENT then put the motion to expel, and declared it carried.

DR. W. P. HORTON then asked for the call of the roll. The calling of the roll showed 24 members present, and resulted as follows:

On motion to expel Dr. R. G. Warner—Ayes, 21; noes, 2; not voting, 1.

To expel Dr. W. L. Gares—Ayes, 13; noes, 7; not voting, 4.

NIGHT SESSION.—WEDNESDAY.

DR. WM. MITCHELL, late of Delaware, O., and now practicing in London, Eng., was transferred from active to honorary membership.

Amendments to the constitution, making the penalty for a violation of the Code of Ethics, "reprimand, suspension, or expulsion," instead of expulsion only, were adopted. The By-laws were so amended that the Committee on Ethics make their report "immediately," instead of at "the next regular meeting," the meaning of the latter phrase having been called in question.

DR. W. P. HORTON called for the roll on these amendments, which showed: Ayes, 13; noes, 4. The regular subject for discussion was then taken up.

IMPROVEMENTS IN ARTIFICIAL DENTURES.

DR. J. R. CALLAHAN read a letter from DR. J. G. TEMPLETON, of Pittsburg, Pa., on *Prosthetic, or Artificial, alias Mechanical Dentistry*.—[See page 584, vol. iv.]

DR. J. TAFT, of Cincinnati, read a paper on the subject.—[See page 573, vol. iv.]

DR. C. H. LAND, of Detroit, Mich.: What we want is more education on this subject. No man is a true dentist unless he is a *whole* dentist. You can't separate the profession into two parts. I don't think we shall live to see the day when that can be done. Those of us who do not want to take hold of this or that part, are more to blame for cheap dentistry than is the man who advertises teeth at \$5 a set. Cheap dentistry is the enemy of art—it is the "chromo" branch of our profession. Why is it? Because, the manufacturer has made section teeth so perfect that a man

has only to put them on a piece of rubber. The \$6 man can do that as well as I can, because the sections rob me of my art. To overcome this, we must adopt methods that the Cheap John's cannot. Four years' ago I began to study this subject—how to do better than these men, and in an artistic way, I found that I had to make a new system of working, and in doing so, made some discoveries that had not been before thought of. I shall speak chiefly of upper dentures. The conditions of the mouth had to be studied carefully and scientifically. I soon came to know the angles of the mouth, and what the pressure of the plate upon the mouth would be.

In adapting an upper denture to the mouth, the first step is to provide a proper system of reliefs, governed by the conditions presented in each case; second, to utilize the pressure of the atmosphere for the temporary purpose of establishing an adaptation; third, to provide means by which moisture may be retained between the plate and the mouth. To retain a plate by atmospheric pressure alone, would have a tendency to draw down and injure the tissues of the mouth; also, to spoil the shape of the mouth. Upon investigation, I found that the maintaining force of a rubber disk or cup $1\frac{1}{2}$ inches in diameter—about the size of a rubber plate—was only a few ounces. Therefore, I concluded that atmospheric pressure played only a small part in retaining plates, and that they were really maintained by capillary force, and I think this will soon be universally understood.

The "reliefs" must vary with the conditions of the mouth. A mouth with a roof at an angle of 45 degrees, is most unfavorable. By actual test, I find that its greatest sustaining power is six pounds. There is no atmospheric pressure where the denture is properly adapted,—there is a sort of equilibrium established by means of the moisture between the plate and the palate. A very dry, rigid, flat mouth, is very difficult to fit, because there is no moisture to help. If it was practicable, a piece of linen or some such substance between the denture and the mouth would assist in making a fit. But you must use something that is antiseptic, and by increasing the moisture get a better fit. I rely more on capillary, than atmospheric force.

I sometimes carry the relief on to the soft plate. Where the front ridge is spongy, I sometimes use a piece of cotton on the plate for a few days, until the mouth is used to the plate. No

mouth ought to be taxed longer than three or four days to adjust an artificial denture.

As intimated, the mouth must be studied for itself—a rigid plaster cast does not represent the mouth—with its soft and hard tissues, and the diameter, to be considered.

I knew of one case where the patient could masticate, and the maintaining force was only three ounces. I once believed that continuous gum work could always be made to fit—if it didn't, then the fault was in the dentist, and not in the weight of the denture. In a mouth with only three ounces of retaining force, the continuous gum will fall. Have heard men talk of 14 pounds pressure to the square inch; but I give that up. If they had it, the denture could not be worn. I tried, like others, to make a combination of continuous gum and rubber, always putting fourteen teeth on a plate. Found that fours and sixes never broke—the fractures (caused by lateral pressure) were always between the cuspids and the bicusps. The only practical way is to make the six front teeth of continuous gum on platinum and use section teeth for the rest. [The front portion is attached to the rubber plate by a flange of the platinum imbedded in the rubber.]

The expression is modified only by the six front teeth. You can use plumpers, or do as you please with the back teeth. Art properly comes in, in the selection of suitable teeth; this must be reduced to a system, and demonstrated by results. We need more education on this subject. The artistic dentist will always be paid for what he does; and we should not be too hard on the \$6 men. There will always be a great deal for all classes of dentists to do; and some people cannot afford any other priced teeth. The \$6 man does not really interfere with the artistic dentist. I know many families that I have much regard for, who cannot pay much money for continuous gum, and yet want something better than cheap teeth. I must have something to give them in place of the "chromo" sets of teeth. They may be able to pay \$30, but not \$60 or \$75; and I can afford to give them this combination of continuous gum and rubber. There is a great tendency to run down rubber. I realize the fact that rubber is not as good as metal in the mouth. Sore mouth, caused by metal plates, is usually from lack of friction.

Some mouths really demand rubber rather than metal, to

secure a perfect fit, and in some, it is not practicable; but if I have to fit a dry, rigid mouth, with little or no advantages for retaining the plate, I want rubber, because it brings about the lacking conditions and is lighter and easier to adapt. Of course metal plates can be adapted the same as rubber; but if I wanted to be very successful in a difficult case, I would use rubber. In my own practice I have known rubber plates to be worn fifteen or more years without injury to the mouth.

[In answer to questions from members]. The gas furnace will supercede all others in working continuous gum. It has a few defects, but I am working to improve it in that respect, and will shortly have a furnace that will not blister, or "gas" the porcelain. In taking impressions of the mouth I prefer plaster, because it gives you the mouth just as it is. If it is not desirable to have a fit too accurate, I take the impression in wax or modeling composition.

The line of fit is across the posterior part. Get a good hard bearing over the heels of the process, and run a rib across the plate where it comes in contact with the soft parts, first finding how much it will bear.

My system of studying the mouth enables me to take a better impression than I could otherwise. When I see it, I know the angles, etc., at once.

[Do you take both upper and lower impressions in plaster?] There are mouths in which I would not be successful with plaster, yet I seldom use wax. Sometimes use wax for lower impressions when the loose, flabby muscles cover the ridge, and the plaster would not reach it. Then there are partial cases where the remaining teeth would not guarantee success with plaster. [Do you ever wax the teeth?] Sometimes, and put a little sweet oil on them. Sometimes use a little cotton around them. It makes a good impression.

In taking an upper impression, I first take some plaster on a knife and fill up the mouth across the arch, level with the alveolar ridges, then put enough into the impression tray to fit up to that already in the mouth, pressing well up posteriorly to prevent any escaping into the throat.

I can be successful with a model from a plaster impression without using wax, and that satisfies me. Others may be more successful with something else.

The chance of success in fitting an upper denture decreases as the angle increases over 45 degrees. These mouths, with an angle of 45 degrees or over, you can only estimate the proper manner to fit them—the more rigid the mouth the less the relief, and *vice versa*.

The man who makes *every* case a fit, and expects that every one can eat green corn from the cob with a set of artificial teeth, makes a mistake—it cannot be done. Many rubber plates do not fit because of improper packing of the rubber at the palatine ridge. I never pack any rubber in the center, but make it an escape for the surplus at the sides.

I use No. 6 tin to coat the model, instead of varnish. Use a solution of soap on the tin next to the rubber, and it will come off the rubber easily. Varnish the model with shellac before applying the tin.

The use of a thin film of tin or varnish on the model will assist the fit of the plate; for I believe that it is molecular attraction more than atmospheric pressure that makes the fit. The most successful denture is the one that will support moisture equally distributed over the surface next to the mouth. With a proper system of reliefs we need not depend so much on the pressure of the atmosphere.

DR. H. A. SMITH, of Cincinnati: We all recognize the advantage of capillary force by dipping the plate in water before inserting it in the mouth. Am not sure whether it is cohesion or adhesion that operates most favorably to keep the denture in place. If, as I am inclined to think, it is capillary force, then would not a rough plate be better than a smooth one?

DR. I. WILLIAMS, New Philadelphia, O.: It is easy to demonstrate that it is *not* the pressure of the atmosphere that holds together two pieces of perfectly fitted glass. It is some internal force or attraction inherent in the two pieces of glass. It may be a question whether it is cohesion or adhesion. I should call it cohesive attraction. It is precisely the same force that binds together the molecules in a solid body, though not acting with the same force that it would in a perfectly solid body, from the fact that the contact of the two pieces of glass cannot be made as perfect as a naturally solid body. It is this force upon which we should depend to retain dentures, and not the pressure of the air. "Air-chamber" dentures are injurious to

the tissues of the mouth, because "nature abhors a vacuum," and when a partial vacuum is created, the tissues rush in to fill the space.

It has been quite awhile since I have made an "air-chamber" in a plate. I depend solely on what appears to be either cohesive or adhesive attraction. We are told that the former takes place between dissimilar objects, and the latter between similar substances. The difference seems to me to be exceedingly slight. It is an attractive force in either case, and should be employed to adjust dentures to the mouth, instead of depending upon air pressure.

DR. C. H. HARROUN, of Toledo: I lately had a chance to see how dentists, in the West, work. One jolly old fellow saw me looking at some of his work, and remarked that they had to fix those things a little different from our way. In one plate the air-chamber was $1\frac{1}{4}$ inches long, 1 inch wide, and $\frac{1}{4}$ inch deep. He said, "Biddy comes in and wants a fit; we put this in; she smacks her lips, it sticks, and she goes off happy." He had to do it to get them to wear them at all. I went about among the dentists a good deal and, with a few exceptions, think we are far ahead of our Western brethren in prosthetic dentistry.

DR. H. H. HARRISON, of Cadiz: The discarding of the air-chamber is a great advance. Another is the growing use of single teeth in making artificial dentures. I think rubber occupies an important place, and should not be discarded. It can be properly used to the advantage of both operator and patient.

DR. J. TAFT, of Cincinnati: If it is desirable to have the tin, on the model, rough, it can be made so by running it through the mill with some cotton fabric—that between sheets of rubber will do—leaving an indented, yet smooth surface. Why not leave the roughened tin on the palatine surface of the plate? Dr. Robinson, of Jackson, Mich., is now lining rubber plates with heavy gold foil. Another method, in use years ago, is the introduction into the surface of the rubber plate of the gold web, or gauze, giving a thinner plate, with better conducting power. Have seen a plate made in that way which has been worn 24 years and is still doing good service, and is not much the worse for wear. Often the selection and adaptation of the teeth to the case require great care and patience. Many times it will take two to six hours to restore, in the wax pattern, the lost expression and

features of the face. You have to try it in conversation, repose, laughter, etc. It requires hard, patient work and study to accomplish it, and it cannot be done for nothing.

DR. A. BERRY, of Cincinnati: There are so many people requiring artificial substitutes for teeth, that we should avail ourselves of any practical improvements brought to our notice, and of all the knowledge that we can get. Dr. John Allen taught us that every case should be studied, and he was right. You can't make a set of teeth in a hurry; it requires time and patience. A great many failures result from lack of care on the part of the dentist. It is unfortunate that the use of the web or gauze has been abandoned. It was a good thing. One trouble was that patients expected too much from it. They got it into their heads that because you improved the plate—making it thinner and lighter—the *teeth* ought not to break.

DR. F. H. REHWINKEL, of Chillicothe: We have all heard of the sore mouths caused by wearing rubber plates. I had a case, not long since, caused by wearing a metal plate. Fifteen years ago I made a gold plate for the patient, and when I saw the mouth, the whole mucous membrane was very much inflamed—the dome, the soft palate and the tonsils. You can set it down at once, whenever you see a sore mouth caused by wearing a plate, that it was from wearing the plate at night. I ordered him to stop wearing it at night, and in a few days there was a great improvement.

I have had two or three cases where rubber could not be tolerated in the mouth. I lined the plates with gold. A simple method is to take coin gold, rolled as thin as possible, and yet have sufficient strength to turn all the angles of the model and not break. Punch near the edge a series of holes, just far enough from it to make a sort of dove-tail [tenons?] After that put the plate on the zinc model, and with a pair of pliers bend the edges of the plate over to a right angle, and you have a series of points that will be imbedded in, and prevent the rubber pulling off. It is, of course, necessary to get up extra models to use this method.

DR. H. A. SMITH: Why not use a solvent to give the gold or tin a roughened surface? If you reduce the thickness of the rubber so as to destroy its strength in using the web, what is the advantage of it?

DR. J. TAFT: As strong dentures as could be were made

in that way. The plate can be made thin where thickness would be objectionable. Made a plate of rubber and gauze for a party who had smashed a continuous gum plate. He wore the rubber a number of years, and it did not break.

DR. J. R. CALLAHAN, of Hillsboro: I hope something will be said by the older members to induce the profession generally to take hold of continuous gum work. Should like to hear from Dr. Land in regard to the gas furnace.

DR. C. H. LAND: The difference between the gas and coke furnaces is in the comfort and convenience of the operator while using the gas furnace. With the latter, I can easily make a set between patients, and thus not lose anything from operating. If it was a coal furnace, I would have to stay with it from the start to the finish. There is one difficulty with the gas furnace, and that is the penetration of the muffle by the unconsumed hydrocarbons, causing "gasing" or blisters in the enamel. Better have a raw biscuit than burn it too much, as that will cause the enamel to crack where it comes near the platinum. It is the hydrogen that is most mischievous. The oxygen is almost inert. I am perfecting a new furnace in which I hope to overcome these difficulties. There is only one way to accomplish artistic results in prosthetic dentistry, and that is with continuous gum—either Dr. Allen's, or the various modifications and improvements of it (although it is hard to improve much on Dr. Allen's work). There is not any difficulty in making a fit, if such a thing is possible; but we should remember that weight is a factor, and if that is against us, we must resort to other methods than continuous gum.

DR. C. H. JAMES, of Cincinnati: I am satisfied that for years we have been advancing backward in this branch of our profession. The remedy is to get back to first principles—gold, continuous gum, and other metallic bases. Dr. Land's method differs from the old in that we first biscuited, and then burned the body fully; and we expected to find cracks in it which we filled with body and then fused the enamel. He does not burn the body hard first, but body and enamel together.

DR. A. BERRY: In former years he who made continuous gum work must spend 24 hours at it, hurting his eyes, etc., and be kept away from the operating chair. All artificial teeth are nuisances; but there is a difference when the patient takes out

the infernal thing and looks at a vile piece of rubber or a beautiful piece of artistic continuous gum. If you are an artist (and if you are not you have no business in the profession) you can satisfy your artistic sense in restoring the lost features and expression with continuous gum, and by that method only can it be done.

DR. C. H. JAMES: The needs of the poorer patients can be satisfied by using cast metal plate, with celluloid or rubber to attach the teeth.

DR. C. H. HARROUN: I have constructed an upper plate for a man who had "been the rounds" of the "cheap Johns." The gum over the front of the ridge was very spongy, and he had had it cut away by a surgeon before coming to me. I finally made him a plate of Watt's metal, attaching the teeth to it with rubber. It was so comfortable and satisfactory that he would hardly allow me to take it out long enough to finish it.

DR. C. H. LAND: [In answer to question]. In continuous gum work, the shrinkage or contraction is from the outside in and you can estimate and make provision for it. I sometimes spring the plate until the posterior portion comes down so much that the plate will not fit. Even if it is too large it does not matter—the mouth can be brought to fit it; but if too small there is no remedy. To be successful we must know what modifications to make in each case.

MORNING SESSION.—THURSDAY.

Dr. H. H. Harrison read a humorous production by Dr. J. F. SIDDALL, of Oberlin, entitled *Anæsthesia: an historical poem*, No. 2.

DR. J. E. ROBINSON, of Columbus, exhibited and explained a number of casts from mouths of syphilitic cases.

On motion of DR. C. H. JAMES, a committee was appointed to revise the dental law, with power to act in securing its passage by the legislature. The President appointed Drs. F. H. Rehwinkel, of Chillicothe; C. H. James, of Cincinnati, and I. Williams, of New Philadelphia.

On this motion, DR. C. R. BUTLER said: The time has come when we should have a revised dental law. One of the features needed is registration.

DR. GEO. WATT rose to a question of privilege, to ask if a

report in the *Daily Ohio State Journal* of to-day was correct in stating that the Secretary, Dr. J. H. Warner, had ordered the official stenographer not to take Dr. W. P. Horton's remarks.

DR. J. H. WARNER acknowledged that he had done so, because Dr. Horton's remarks were irrelevant, and not worth reporting, and there would not be any money to print such matter any way. Moreover they would appear in the *Independent Practitioner*, before the issue of the Transactions of this Society.

DR. REHWINKEL: I have received letters in regard to persons not qualified to practice dentistry. In the southern part of the State there are a number of persons practising dentistry under a diploma from Delavan; this institution is selling diplomas for \$12, and is nothing but a fraud throughout. This college is not recognized by any Board of Examiners, or anybody else, but unfortunately, our law is so lame that we can do nothing. There is a good deal of illegal practice done in the State, and it is nobody's business to enter into a prosecution. The truth is, our present law is in such a condition that it is exceedingly uncertain whether a successful prosecution could be entered into and carried through. These diplomas are not good, and ought not to be allowed to come in here and enable the holders to practice. Any college which does not act up to the full requirements of the established standard, ought not to be recognized. Any college which does not require a one or two years' course, ought not to be regarded as a square institution. Of course, a course in a medical college is equivalent to one course in a dental college, but that institution in Delavan requires no course whatever, and the profession ought to take some action in the matter. I move that the subject be the order of business at 2 o'clock, and that we now adjourn. Carried.

AFTERNOON SESSION.—THURSDAY.

The special order was taken up. Bogus diplomas and violations of the Dental Law.

DR. J. TAFT: I hardly know what to say in reference to this subject; and as to what action the society can take in the matter, I am not fully decided. The fact that this bogus institution in Wisconsin has been in operation for years, is familiar to everybody. So flagrant is this, and so extensive have been their opera-

tions, that they have brought great reproach upon all the institutions of this country, and in other countries also. It has been mainly on account of this, that other countries have disregarded American diplomas; and the question, of course, comes home to every member of the profession. Every one has an interest in this, and should have; and if anything can be done by which this thing can be remedied, or by which the power of that institution can be controlled or curtailed, I think it ought to be done.

If the different State societies would each make an effort, or if they had sent a strong protest to the Legislature of Wisconsin, it would have been wiped out long ago. Now, if the difficulty could be met in that way, it ought to be done; and it is for us to contribute any effort we can to the accomplishment of this result. The wiping out of it would be the best thing; and I think we are all prohibitionists as far as that institution is concerned. It has wrought mischief, not only by sending out bogus diplomas, but has brought into disrepute the profession in this country; and particularly in foreign countries. No diploma there amounts to anything as I understand it, and largely because of these bogus diplomas.

DR. C. R. BUTLER: If our Society disapproves of such conduct, something ought to be done to show its disapproval. Diplomas from colleges in this country are not received with that respect to which they are entitled, and particularly is this true in Germany; and if there is anything which can be done to remedy this evil, we ought to do it.

DR. WATT: I don't know anything which the Society can do, but there is something very radically wrong. Dr. N. W. Williams, writing from Geneva, Switzerland, states that it is very common for Germans to come to this country, spend part of a session here; buy a diploma; and then go back and compete with our American dentists abroad. Thus the term of "American Dentist," instead of being an honor, becomes a reproach.

DR. H. A. SMITH: Further than a committee to confer with the Wisconsin Society, I do not think we can do anything.

DR. GEO. W. KEELY, of Oxford: About four years ago I had the pleasure of attending the State Society, at Milwaukee, Wis., and then heard of this college; and one of the professors came into the society's rooms. I don't think I ever saw such a commotion as his appearance gave rise to. I was told that the head

professor had been a medical man of good standing, and had been very prominent in the State, and his brother used his influence to prevent his getting into the college, but he went into it believing there was a pile of money in it.

A letter was read from Dr. R. G. Richter, Secretary of the Wisconsin State Dental Society. It stated the Society was making an effort to have a law passed abolishing the Delavan diploma factory.

DR. L. M. GRAY, of Zanesville: I have received offers from the Delavan College of a percentage on all names I sent them, who should buy diplomas. Have been in practice twenty-four years, and for twenty years had a splendid practice, which has been spoiled by quacks.

DR. C. H. HARROUN read a circular issued by a holder of a Delavan diploma, in his vicinity. Among the items in his price list was "Gas, per dose, 50 c."

DR. F. H. REHWINKEL: We can not do anything with our present law. Although Ohio was almost the first State to have a law, others had followed with better ones. The Illinois law is all that could be desired.

DR. J. TAFT offered the following:

WHEREAS, It appears that certain parties are practicing dentistry contrary to the laws of the State of Ohio, and screening themselves under a diploma issued by the "Wisconsin Dental College," at Delavan, in that State, said diploma not being recognized by any State society in this country:

Resolved, That this Society greatly deplores the existence of, and mode of procedure employed by, the said Wisconsin Dental College, which issues diplomas entirely irrespective of qualification, and without any instruction pertaining to dentistry. We pledge to the Wisconsin Dental Society any aid in our power for the suppression of this quack institution.

Adopted.

DR. F. H. REHWINKEL read a paper entitled Food, Animal and Vegetable, by Dr. E. J. Lilly, of Circleville. [See page 567, Vol. IV.]

On motion of Dr. J. R. Callahan, the rules were suspended and an election was held for officers to serve during the ensuing year, resulting as follows:

PRESIDENT, DR. C. H. JAMES, of Cincinnati.

VICE-PRESIDENT, DR. H. H. HARRISON, of Cadiz.

SECRETARY, DR. J. R. CALLAHAN, of Hillsboro'

TREASURER, DR. GEO. W. KEELY, of Oxford. [Re-elected.]

Member Board of Examiners (to serve three years), DR. H. A. SMITH, of Cincinnati. [Re-elected.]

On motion, the new officers were installed at once.

DR. F. H. REHWINKEL, Secretary and Treasurer of the State Board of Dental Examiners, reported that one candidate had been examined and failed to pass. A certificate was issued (since last annual meeting) to Oscar Beeks, of Oxford.

Financial report—

Received fees,	\$6.00	
Paid expenses,		4.75
“ Treasurer O. S. D. Society,		1.25

Received and adopted.

The following were appointed delegates to the next meeting of the American Dental Association; E. G. Betty, Cincinnati; J. R. Callahan, Hillsboro'; H. F. Harvey, Cleveland; A. O. Howe, Washington, C. H.; C. H. James, Cincinnati; J. E. Robinson, Columbus; J. H. Warner, Columbus.

The special committee appointed to investigate the trouble between Dr. Horton and the Secretary, made its report as follows:

THE COMMITTEE appointed to consider the matter in controversy between Dr. W. P. Horton and the Publication Committee, relating to the efforts of the former to obtain possession of papers read before the Society at the last annual meeting, in advance of their appearance in the Transactions of the Society, would respectfully report—

That they have carefully considered the statements, and are of the opinion that Dr. Horton, as a member, has not violated any written law of the Society, yet, in what appears to the committee his over zeal, in the capacity of reporter for a dental publication, to obtain possession of the papers for use, he has not observed the rule which he admits has obtained in the Society, viz.: That all papers read and accepted become the property of the Society, and can not rightfully be published in any paper or journal other than the Transactions, without the consent of the

Society, and that he is clearly chargeable with discourtesy toward this body.

[Signed]

H. A. SMITH,
A. F. EMMINGER,
FRANK A. HUNTER, } *Committee.*

On motion of Dr. J. Taft, it was *Resolved*, That, upon the final adjournment of this session, this Society adjourn *sine die*, and that at that time the organization be dissolved.

Motion to reconsider lost.

On motion of Dr. H. H. Harrison, it was *Resolved*, That if from lack of funds or any other cause, a volume of Transactions be not issued, the papers read at this meeting be regarded as the joint property of the *Dental Register* and the OHIO STATE JOURNAL OF DENTAL SCIENCE.

The Committee on Publication reported the cost of issuing the Transactions for 1883, including \$100 paid the chairman, Dr. J. H. Warner, for services in securing advertisements, etc., \$209.10. The receipts for advertising were \$231.00, leaving a balance of \$22, which was turned over to the Treasurer of the Society, who reports a balance on hand of \$14.14. Appropriations had been made to pay the Secretary and Treasurer each \$25, also to pay the official stenographers, the janitor, for engraving names of presidents on the gavel of the Society, etc., etc.

Adjourned, *sine die*.

Books and Pamphlets.

THE RUBBER QUESTION. By Mrs. W. M. J. Reprinted from the *Southern Dental Journal* from March to July, 1884.

Received Dec. 9th, with the compliments of the author. Those who wish to get the cream of our periodical literature on this subject will do well to obtain this pamphlet. We presume it may be readily secured through the *Southern Dental Journal*. It contains some thirty-four pages.

Our Aftermath.

TWO-TAILED RATS.—The two-tailed rat has again made its appearance in the dime museums. The animal is not a *lusus naturæ*, but the victim of anti-septic surgery. The tail of a healthy rat is cut off and inserted in a V-shaped cut in the nose of a second. Antiseptic dressings are applied, and the four limbs tied to a little frame to prevent scratching the new appendage. The second tail "sets" in twenty-four hours, and in four days nervous connection is established. Thereafter the rodent guards its front tail as zealously as the other.

The above may be fact or fancy; but it is not long since many physiologists were teaching that nerve tissue can not be reproduced, even though quite as many surgeons, by operations for facial neuralgia, etc., were demonstrating the unsoundness of their position. That nerve connection may be re-established even through a considerable space is well established in the minds of those who think. Our own left index finger has had nervous connection with its tip twice cut off, once by accident, and once on account of rebex trouble from a punctured wound. There was decided numbness, of course, but each time it gradually faded out. We know of a number of replanted teeth in which both nervous and vascular connection has been re-established.—ED. JOURNAL.

A FOUNTAIN DECLINED.—*New York, Oct. 29.*—General Viele, Park Commissioner, said to-day: "Through the Department of Parks, Dr. H. Cogswell, of San Francisco, has offered this city a granite ice-water fountain, for public use. At a meeting of the Park Commissioners, the offer was declined because the fountain is not a work of art, and is only an advertisement for Cogswell's patented ice-water refrigerator."

Dr. C. seems rather unfortunate in reference to his donations. Some trouble arose, if our memory serves, about his proposed gifts for a dental college in California. And now these fellows will not accept the present of a fountain. If charged with ale or beer, instead of ice-water, perhaps they would take it. Perhaps he will become disgusted at such shabby treatment, and give the JOURNAL the benefits of his benefactions.—ED. JOURNAL.

MINERAL QUININE.—We have seen it variously stated for several months that PROFESSOR FISHER, of Munich, has obtained from distilled coal a white crystalline material, which acts on the human system exactly as quinine does, while it is claimed that is more readily assimilated. If less injurious to the sense of hearing, the substitute will be welcome. Send it along, or pass it around that we may all test its merits.

DR. D. J. SNYDER, of Scio, O., says that he will furnish the seeds of the eucalyptus globulus, with directions to plant, to any medical gentleman who desires to attempt the effort to raise them. He is sure that if the plants be kept for the first winter in a hot house that they would gain strength sufficient to enable them to endure the following winters.—*Detroit Lancet.*

OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. V.

FEBRUARY 1, 1885.

No. 2.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

DRUNKENNESS—CAUSE AND CURE.

BY H. R. MC CLELLAN, M.D.

[Read, in substance, before the Xenia Academy of Medicine.]

IT has been supposed in general that drunkenness in all its aspects, is under the control of the will, and that its results are those of voluntary debasement. Taking a more philosophic view, we are led to associate it with disease of both body and mind. All means hitherto employed to arrest it have failed, and the inference is they were not adapted to the malady. Treated as an outcast, the unfortunate victim has become rebellious, and, perhaps, the passion leading him to destruction has been strengthened, just as chains and stripes heretofore used, rendered the condition of the insane more deplorable.

To administer a remedy in everyday practice, with any hope of success, we must ascertain the seat and nature of the disease. And to impress upon our minds the importance of any plan for the cure of drunkenness, it may be proper to inquire what it is.

We admire the polish, the nice adjustment and skillfully

balanced power of a machine. Within a given time, and with entire safety to itself, its wheels may perform a given number of revolutions. Accelerated beyond this the whole structure begins to shake, joints are opened, screws loosened, bolts broken, and alarming injury speedily follows. While admitting with the psalmist that we are "fearfully and wonderfully made," yet how careless we are in the estimate of the harmonious action and power of endurance in the human constitution !

Blood, air and food are natural stimuli to keep the human body in healthful action ; and artificial aids are not necessary to keep an even balance between waste and repair. For its healthful exercise the body requires only that which Nature, under the direction of Infinite Wisdom, supplies. All other things are artificial, useless, destructive. It is true that the body has great power of adaptation, and may not be totally destroyed by long continued morbid impressions. Still danger is always near, and as if ready and more than willing to take advantage of circumstances. Habit begins at a very early age ; and its effects may be traced onward to even three score and ten years. The infant receives its bath, its promenade with the nurse, and from its mother the pure material intended by Nature for its nourishment. Deprive it of any of these, and it becomes restless and irritable. Give it food to which it is not accustomed and it becomes uneasy, and perhaps sick.

The chewer, the smoker and the snuff-taker are all under the dominion of habit. There is nothing natural in the use of tobacco. It has nothing in taste or odor to charm the unperverted sense, but is offensive and nauseous. An individual begins its use as an imitator, from a desire to indulge in a manly accomplishment. At first he sickens, but tries it again, until the system is goaded into a tolerance of its effects, which becomes more pleasant with the establishment of a habit. Once established this is but stepping stone to another habit, if the bottle is at hand.

The indulgence of revolting appetites will illustrate the control of the stomach or brain, in a morbid state, over the entire individual. From the continued use of narcotics, the nervous system, controlling not only the functions of the stomach, but other organs, becomes morbid. It is fascinated, as it were, by its own destroyer, and seems willing to go whither it may lead.

Is it the delicious taste of whisky that lures the drunkard to

a repetition of his draughts? No. With many the odor and taste are offensive. Watch the inebriate with the glass in his hand. He raises the poison to his lips again and again, while each time nausea evinces a surfeit. He struggles—not to resist, but to throw himself into the merciless grasp of the tempter. What has induced this but an ungovernable habit—an insatiable desire for more? The stomach had become turbulent, and evinced a determination to resist, but it was subdued by the master passion, the *desire for drink*.

Man is a creature of imitation, and is governed far more by the force of example than by precept. How many infants and children, think you, there are in this city of churches, who are almost drunkards? Infants and children? Yes. Consider for a moment, the facts. A man invades the sanctity of his own fire-side by the use of a poison. The smoke of his cigar fills his parlor, bedroom, and nursery, as well as the lungs of his children. These children thus become narcotized, and their nervous systems are forced into a state of disease, which, sooner or later, will demand a counteracting stimulant. Thus in the bud of life, when sweet innocence demands assiduous care and protection, are we nursing a worm that will eat into its core. Thus we are sowing the germ of intemperance which means drunkenness.

It will not be denied that the traits of the parent's constitution, whether original or induced, are transmitted to the child. Is the parent a consumptive? The child may become one also. Is the parent insane? A fearful fate portends the child. Is the parent a drunkard? The feebleness, the waywardness, the diseases which his habits have implanted, may be all transmitted to the child. Oh, what a fearful risk, what a load of responsibility does that parent assume who makes of himself a drunkard! A drunkard by inheritance! What a terrible reflection! It is true that the parents of many dissipated young men have been prominent examples of abstemiousness, and sound practical virtue. Early indulgence, an unfortunate selection of associates, and other kindred causes counterbalance the best parental teaching. Yet daily and extended observation has led us into the belief that the children of those who use tobacco to excess, and those who drink spirits to habitual drunkenness, and those who keep themselves under the influence of opium, are unsteady in purpose, impulsive in their undertakings, and more easily led into ruinous

excesses. And it may be asked with some show of reason, how long it will take the present and increasing rate of progress to make this a nation of *drunkards*?

Some may claim that if drunkenness is hereditary, the passion for strong drink should be developed in early life. It is occasionally, but not always, nor do the laws of transmission render it necessary. A disease germ, as the virus of hydrophobia, may remain in the system unperceived for many years. A taint of scrofula or consumption has passed from parent to child; yet, by careful living, avoiding unhealthy exposure, and by sustaining, in every possible way, the tone of the system, it has been prevented from assuming an active form during a long period, even a whole life.

A son in whose veins runs the blood of an intemperate father, require, unusual care; and when mingling in busy life, he must avoid the temptations of the bottle, or *his fall will be as certain as his birth*.

The importance this thought has on the marriage relation is worthy of attention. A woman must sometimes ask herself if, aside from her own immediate suffering, she may not be held responsible for misery and woe entailed on a possible innocent and helpless offspring.

Now we are asked, Do we call drinking—mere drinking a disease? Certainly not. The disease consists essentially of an unconquerable thirst for narcotic stimulants, having for its foundation change of structure or function. Like every other disease, drunkenness has its own peculiar symptoms. Smallpox and measles are classed as eruptive diseases, yet they are distinct in appearance, in progress, in effects. Convulsion is a term clearly expressive of an external symptom of disease, yet it conveys no satisfactory idea of the point from which such symptoms radiate. To know when a man is drunk it is not necessary to know what state of the stomach, brain or nervous system excites the desire for drink. In other words, the fact that we may not be able to describe the true morbid state impelling to drunkenness, or to the use of intoxicating liquor to a greater or less extent, is no argument against the existence of a morbid state. At times, however, the stomach of the drunkard is found to have become inflamed, softened, and thickened, his brain disorganized, its blood-vessels attenuated, and its cavities filled with serum.

The inquiry may be presented here, Is the drinking the cause, or the effect of morbid changes? We are inclined to think they are mutually cause and effect. Take a man whose nervous system is in a condition demanding narcotic stimulants, and who obeys the demand. The thirst and the indulgence follow each other in rapid succession. The stomach, which has, seemingly, maintained the integrity of the functions, becomes sensitive to pressure; it digests food imperfectly, and frequently ejects its contents. Still the growing desire for drink is in no way alleviated. Time rolls on, and epilepsy prostrates the man in the dust, with intellect enfeebled, with limbs less elastic and strong. The pitiable, yet unpitied victim indulges in still greater excess.

A few years ago a young man, the son of one of our fraternity, drank, and drank again, and at last he fell prostrated. He was taken home, and, in a few hours, died. His brain was examined and found to be unnatural in structure. An artery had been ruptured, and there was found a large clot, with much effusion, compressing the brain. This many of you witnessed. The morbid condition of the brain of this unfortunate young man increased in proportion to the amount of his drinking; and the demand for drink was regulated by the increase of disease. The cause and effect alternate with each other in such cases, and strengthen each other in their progress, and without coercion they are not separated.

This subject might be enlarged by a detail of minor causes of drunkenness, such as the alcoholic nostrums called "bitters," so extensively advertised, sometimes even in so-called religious papers. They are generally vile compounds of cheap whisky, and their principal effect is to develop an appetite for strong drink, and thus they do almost incredible mischief.

These expressions in reference to the causes of drunkenness are not meant for a fancy sketch; but they set forth an honest conviction resulting from observation and experience.

And now, for a few moments, we will endeavor to direct attention to the close resemblance of drunkenness to insanity. We will place them on parallel lines, and state that no change of climate, no variation of temperature, no modification of circumstances, nor ingenuity of man can change their relations; and while presenting a few cases, we ask your honest diagnosis of them. But just here we call your attention to the fact that we intend not so

much to discuss the arrest of intemperance, as to provide a means of cure for those who cannot cure themselves.

But for the cases :

An individual who has occupied an enviable position in all the relations of life, has become unusually loquacious or taciturn, pleasant or morose. He is insulting in his language, and threatening in his manner, claiming to be a king he commands unqualified submission, or a millionaire, and his money is foolishly squandered. Between friend and enemy he makes no distinction. An expression of calm intelligence has given place to a wild, unmeaning stare. His apparel no longer betokens order and decency ; for he is bare at the elbows and knees ; one foot is shoeless, his hair is uncombed and matted, and his face is covered with dirt. Now tell me, Is this man drunk or insane ? Take your own views of these conditions and apply them. Ask not if he has been drinking, or has suffered misfortune. Inquire not into the cause, but tell from the symptoms. Is he drunk or insane ? You seem to say, Oh, well, I — — — would like to inquire how long these manifestations have continued. This can not be taken as a satisfactory criterion : for the minds of the drunkard and the insane may continue in their weakness and wandering for an indefinite period ; or they may be alike controlled by the laws of periodicity. Men become drunk and sober at stated times ; and others, in like periods, become insane. Why an individual should have a clear, discriminating, logical intellect one month, and the next be clouded, unsettled, fanciful, and wild, is past our comprehension. Nor can we touch the secret spring which makes a man, alternately a lazy drunkard and an industrious penitent, yet the fact is sustained by observation.

There is even yet a closer connection between drunkenness and insanity. In many well authenticated cases insanity had become fully developed before the slightest desire for alcoholic drinks was manifested, after which it grew fearfully violent. The wandering of the intellect and the inordinate thirst have continued and terminated together.

Men differ in their physical, and why not in their mental constitutions. Some are cheerful and energetic, while on the highway of prosperity, while in adversity they are despondent and inactive. Successful enterprises, as well as great reverses, have been causes of insanity. In like manner, they have elevated

or depressed nervous energy, resulting in drinking and drunkenness.

Aside from this professional view of the subject, let us take some of our daily observations, and apply them in the formation of our opinions. Take the case of one who was conceded to be among the best tempered men of our city. He had the confidence of all. His social qualities had gathered around him many boon companions. Drinking fast became a habit with him. He returned to sobriety, but only for a time; again and again alternating between sobriety and periodical drunks. It is needless to follow him further; for already in your thoughts, you have thrown a dark mantle over his destiny. Was that a *willing* sacrifice to the demon of drink? or was he impelled by begotten disease? Some of us older members can give the intelligent answer.

Turn your thoughts to one whose kindness, amiability, and correctness in all things, have been proverbial. No husband had a more just and tender appreciation of a good wife, or loved her with more devotion. No father ever bestowed more care on his children, or made more willing sacrifices for their benefit. No friend ever found him unfaithful or unready. But gradually and stealthily, a master passion seized and controlled his better nature. He felt its power and stood aghast, as if a huge serpent had coiled around him. Conscious of his condition he struggled to release himself, but became overpowered and sunk exhausted. His will was inactive, almost destroyed. He was a drunkard. During the long months and years, to him alternately made up of effort and despair, he saw pictured the ruin of his family, the injury he was inflicting on the religion he professed, and of which he had been an eloquent advocate, and his own frightful fall, from the pulpit to the gutter, and yet he could not resist. Was he a fit object of scorn, or of commiseration? Was there not an insatiable disease, weakening a finely cultivated nature, and fastening upon it a corroding and fatal passion?

Take woman in all her varied relations to society, and there is not one in which she may not exert an influence for good, till she falls into the pit of inebriety. Then she seems no longer a woman. Even pity is grudgingly awarded her. She knows all this, and knowing, could she voluntarily fall, having no other inducement than to fall? Will she abandon friends, and all the captivations of refined society? Will she sever the ties of family and home, to partake of a worse than opium poison? It cannot

be! There is a something within which has power to change her whole nature and over which she has no control. Will this yield to the finger of scorn? Will coldness and neglect change its character? Will tears of affection wash it away? They never have; and they never will. Let us then look to some other source for the remedy.

The form of insanity to which drunkenness is most nearly allied is monomania. This, like every other form of insanity, is associated with change of structure; for we know nothing of mind only as it flows through material channels. And we must not lose sight of those changes known as disease, when we consider insanity. With this understanding, why not associate drunkenness either with mental or corporeal defect?

Like every other disease, drunkenness has its stages of development. In many cases there is a constitutional taint, predisposing to both drunkenness and insanity, this sometimes remaining inactive till awakened by indulgence in drink. But in many cases the insanity is the direct result of intemperance, without any original predisposition. The same condition of brain that consigns a man to a mad-house, exists in a confirmed inebriate. And the one has no more control over his thoughts, actions and fierce impulses than the other. The insane, by a sudden impulse, or strong, direct moral power, have been restored to reason, as if by magic. Fear of impending danger has given elasticity to the lame, and made the bed-ridden take up their bed and not only walk, but run. Copious hemorrhage, and intense pain, have been suddenly arrested by strong moral impressions. The sick have lived through hope, and have died through despair. Similar impressions on the mind and nervous system of the drunkard, have revived the power of the will, resulting in permanent reformation. But this is the exception, and is no more to be expected, in a confirmed drunkard, than the spontaneous cures of diseases caused by malaria, change of temperature, or specific contagion.

In their zeal for the suppression of vice, and the encouragement of virtue, men have advocated and enacted penal statutes against the manufacture and sale of intoxicants. And as much as we hope for the entire suppression of the liquor traffic, we must look at things as they are. It is a serious question whether, in the reaction of public sentiment, from the inefficiency of law, evils are not increased.

What then? We would establish asylums where the inebri-

ates, who wish to be cured, but are powerless to relieve themselves, may be placed under restraint, and be subjected to such moral and medical treatment as will arrest their morbid desire, and enable them to exercise control over themselves. If a man is a periodical drunkard, anticipate the period. Confine him till the period shall have passed, and you will prevent the drunkenness, just as readily as you prevent a paroxysm of ague, by your quinine. Let this confinement be continued just as the case may demand; or in this-wise treat drunkenness as a disease, in accord with your daily practice with any other.

It is claimed by some that if men sincerely desire to reform, they can do so as well at their homes as in asylums. But all experience establishes the fact that the restraints and influences of home have been inadequate to the care of the insane; though objection to asylums for the insane were once as common as they are now in reference to asylums for inebriates. Yet many insane persons have been restored to reason in the asylums.

Having lost all power over his will, the drunkard can not resist the temptation of the bottle while it stands before him. Deprived of his liquor, as he is in the asylum, the morbid conditions demanding it abate, through the recuperative power of the constitution, while appropriate medicines aid the return to self-possession, and thus complete the cure.

There is no teacher more practical than experience. And yet, with the living, speaking, painful examples before us during our whole lives, we are but just opening our minds to a practical recognition of the fact that drunkenness is a disease. Having obtained a true solution of the nature of intemperance, let our efforts be spent in giving a proper direction to public sentiment.

THE CODE OF ETHICS.

BY PROF. F. W. SAGE, D.D.S.

ARTICLE II. of the code adopted by the American Dental Association is devoted to a consideration of the duties members owe the profession and themselves as regards maintaining the honor and dignity of the profession. It may occur to the reader of this Article, that professional honor and dignity ought to be of

spontaneous origin and growth; a something inherent in the very nature of the offices included within the scope of the profession, a something requiring no badge, no herald, no guardianship. In a sense this opinion is correct. But this view of the matter does not exclude the idea of employing accessories to favor a full and perfect development of the distinctive professional character. The highest perfection of manhood or womanhood is the result of education, an education acquired by being subjected to certain formal restrictions and regulations. Our national and civil institutions are founded upon, and operated by conformity to formal usages long established and universally recognized as proper and indispensable. The Supreme Court of the United States is *par excellence*, the most dignified and honorable institution of the land; and yet the respect and veneration in which its chief officers are held, is attributable, to what extent who shall say, to the fact of their wearing silk gowns, and of their approach to the grand council-chamber being formally announced by a crier. Who shall say that the dignity of their high office ought to suffice to secure the Chief Justice and his colleagues a full measure of respect, without the necessity of resorting to extrinsic aids?

So in private life, a man may possess naturally the instincts of a gentleman,—tact, delicacy, a nice sense of propriety,—and yet without that training which acquaints its members with the usages of refined society, he will inevitably appear at a disadvantage in social circles. He needs instruction to prepare him for the unlooked-for contingencies which take the novice unawares, and lead him into embarrassment. So, too, in the professions, a man requires special training to prepare him for courtesies which he will be called upon to extend and receive. He may be at heart a gentleman; he may resolve to be guarded in look, action, and word, to do nothing inconsistent with professional honor and dignity, and yet, through ignorance of the consequences of certain actions which look innocent and harmless, he may compromise his professional character. Hence it is that members of the dental profession experienced in what conduces to and what detracts from professional dignity, have adopted this code, setting forth the results of their experience and observation. This is the profession's book of etiquette. Whether or not its restrictions and regulations are in some features artificial, is a matter of opinion.

In our opinion, most of the requirements of etiquette both of

society in general, and of professional circles in particular, are founded on sound and justifiable principles. A brickmason or a blacksmith may, without exciting comment, do many things, which if done by a professional man would, at least, mark him as eccentric. A question of taste or propriety may affect his standing in a community almost as much as a question of culpability. The distinction may be arbitrary, still it exists, and all recognize it. It is like a thousand other distinctions which have become established by tradition and usage. The social fabric is made up of such distinctions; they seem to be essential to the preservation of society. On every hand we are hemmed in by conventionalisms, which, by reason of long familiarity, we scarcely recognize as such. These affect our manner of dress, of conversing, of doing business. The minister adopts a clerical cut of coat; the lawyer assumes the "Honorable," (if the popular verdict does not in reasonable time award him the title); the physician drives a chaise instead of a buggy, and writes his prescription in mystic symbols. Some of these distinguishing features of the several callings no longer survive, it is true; they have been supplanted by more subtle and yet more effective measures for advertising. The preacher occasionally employs the alluring arts of the actor; the lawyer has devised the sumptuous banquet which affords opportunity for the post-prandial speech, and a full report in the morning journal; the doctor "goes abroad" for the summer, or secures an invitation from a grateful patient of means, to spend a season at his sea-side villa. Are these means which men employ to attract attention and secure patronage unworthy? We need not here argue that point, we are trying merely to illustrate the fact that men do not seem to depend upon dignity in the abstract for promotion in their callings. All excepting the dentist have employed some such adventitious aids.

Who shall complain then, if the dental profession, with a view to unity and identification as a professional body, adopts a code prescribing rules of conduct? But admitting that the peculiar features by which a professional man is to be distinguished from the non-professional class, are artificial, the question arises whence did they originate? Are we to suppose that, at some remote period, the public conceived such an interest in the matter of distinguishing its professional servants that town meetings were held, and resolutions adopted requesting the prosecuting

attorney to prefix the title "honorable" to his name wherever it occurred in articles prepared by himself for anonymous publication in the weekly newspaper? Did some convention of laymen resolve to send a delegation to all pastors of churches consulting their pleasure about having their letters addressed with the prefix "Rev.," or the affix "D.D.?" Who suggested to the doctors to write their prescriptions in Latin? Not their patients, surely.* Oh, no; none of these things occurred. A more reasonable hypothesis is that self-interest suggested these innovations.

It remains for the dental profession to claim the peculiar distinction of having no universally recognized title. We have, to be sure, our "D.D.S.," but at the present day it is safe to say that not one in five persons not members of our profession, knows what it means. The fact that dentists themselves generally believe that the signification of the title is to the passing public an unsolved enigma, is sufficiently attested by the inscription on the office sign of the word "dentist," which is used either alone or, as it were, by way of explanation of the "D.D.S.," which some affix to their names. It is probably beyond dispute that dentists attach less importance to a mere title than any other class of professional men, lawyers perhaps excepted. While some have betrayed a willingness to hang on to the skirts of the medical profession, the opinion of thinking men in the profession seems to be that, while dentistry may be entitled to rank as a specialty of medicine, this idea does not include as necessary the assumption that dentists are medical specialists. Whatever advances in the direction of a more liberal education may be anticipated for the future, the present concern of the profession is to strengthen and perfect its organization; and to that end the code of ethics directly contributes. We infer that those who prepared the Articles and Sections of that code were actuated by a sense of what the public requires of its professional servants, as well as by a full appreciation of what the dentist has a right to claim from the public. It tells him what to cultivate and what to avoid. The wisdom of the restrictions it establishes becomes more and more apparent the more carefully it is studied.

"Oh, well," says the young society member, "the code of ethics is good enough in its way, but it isn't above criticism, after all. What do you think, for instance, of the section which

*Perhaps the druggists did it.

declares it unprofessional for a member to go from house to house to solicit or perform operations? Isn't that rather arbitrary and unwarranted? What harm can there be in a dentist's going to people to wait on them, if they don't find it convenient to come to him? Don't the doctors do it?"

Here is an intimation that the society did a puerile and unworthy act when it framed and adopted this resolution. The question raised is worthy of consideration. Reviewing the history of the profession, we find that half a century ago the practice of dentistry was in the hands of itinerant watchmakers and jewelers. Below is an extract copied, *verbatim*, from a musty cash-book in the writer's possession, kept by a traveling dentist, watchmaker, preacher (for he combined these callings), during his travels in the South, in the year of our Lord, 1834.

"Nov. 24th, [1834.] Extracting for Martha McClay - - \$.12½
 Marrying Shuler - - - - - 5.50
 Repairing teeth, (for Harper,) 2 shillings - .25
 Marrying Tessler \$4. Mrs. Nutts teeth \$3, - 7.00
 Ext. 1 shilling, Marrying Rinder 20 shillings 2.63"

A moment's perusal of the account shows that the writer's day's labor netted, for dental services \$3.50, and for sowing tares in the enemy's wheat field \$12.00. We learn that later he devoted his time entirely to the ministry, which under the circumstances, seems a natural and justifiable proceeding. He had four children dependent on his labors. He was a dental student of Dr. Hays, having spent just six weeks in his "work-shop," as he calls it. Very little was expected of the dentist in those days. He had no professional character to gain or lose. But as time passed and dentists multiplied, it began to be discovered that the dentists who located and became citizens in communities did more thorough work than the itinerants. It is reasonable to presume that this was attributed to the fact, first, that they were better equipped in their offices, or "shops," and secondly that there was a higher incentive to do the best in their power for their patients, in order to gain reputation and extend their patronage. So that it may be, this section of Article II. of our present code, is primarily an expression of public sentiment long extant, and not purely an arbitrary enactment of those who framed the code. The public has surely given the body of dentists every encouragement to self-improvement, even if it did not suggest the use of

the word "profession." It may be that it cares nothing for titles; at the same time it recognizes and appreciates the qualities which go to make up the professional character. Men are so constituted that they respect more those whom they must seek than those by whom they themselves are sought. If this be doubted, consider for a moment the rise and decline of the commercial traveler or drummer. Twenty years ago when the custom of soliciting orders for goods was in its infancy in the commercial world, it was considered a glorious thing to travel from town to town with samples. The country store-keeper felt flattered at being sought out by the drummer, and gave liberal orders. The drummer commanded the largest salary of any employe of the firm. To-day, the drummer's entrance into the country merchant's store is a signal to the proprietor to prepare for a siege. The visitor is regarded as a bore. He meets with discouragement, neglect, insult, oftentimes. The hotel-keeper has never ceased to like him. He would like the traveling dentist just as well. He seldom discountenances traveling quacks of any kind, who patronize his hotel. He has no settled convictions on any subject such as might affect his popularity.

It is unprofessional "to travel from house to house soliciting or performing operations," because it weakens the dentist's influence, and brings out conspicuously a feature which we all feel ought to be subservient to the prime object of practicing at all, that is to say, it makes the dentist appear like a mere money-getter. So the physician would appear if he went about inquiring where any sick were to be found. The dentist who goes by special request to perform professional services for those who cannot come to him, is not included in this category. The spirit of the code, as we understand it, does not forbid it. A distinction should also be made between those who "travel from house to house" and those who in sparsely settled regions, make periodical visits to previously designated points, there to remain a day or two, or a week, or month. In such a case, the dentist is supposed to be responsible (so far as dentists admit responsibility,) for his services. There is nothing in the conditions essentially different from those which surround him in his home office. "But would you counsel his entering the territory of an already established dentist, to practice in this way?" some one asks. We do not hesitate to say yes, we would have no objection to his

doing so if he chose. Why should he not do it? To be sure he might have secret designs of doing as much work as possible without regard to quality, and of finally evading responsibility for his abuses by omitting to return to that particular place, or town. To that suggestion it might be answered that it is not the business of the profession to insure, in advance, the character of any stranger who claims to belong in its ranks. Nor can the profession deny any man the right to establish his claim to respectability. How are we to be assured that our next-door-neighbor-practitioner who intends moving to a distant state, may not have secretly resolved to abuse the confidence so long reposed in him by his patrons, with an eye single to lining his pocket-book? What matters it to him, now that he is going a thousand miles away, whether he gives his patients faithful service? Still, he might regard you as an impertinent meddler if you should go to him and say, "friend Brown, or friend Smith, inasmuch as you intend soon to go away never to return to this place, don't you think your patients would feel more secure if you should from this time on send them to me!" "The cases are not parallel," you reply, "I have known Dr. Jones for years, as an honest, respectable man, and I do not know anything about this stranger who comes once a month to spend a week in our village. I class him with those quack doctors who travel from city to city, inviting those whom other doctors have failed to cure, to give them a trial. I regard him as I do the sure-cure-for-cancer doctors." Well, if the stranger comes with a great flourish of trumpets, and scatters his circulars in the hotel corridors, and daubs the fences with "announcements extraordinary," you no doubt do him full justice. But if he announces in a proper and dignified way, either by the card in the newspaper, or by verbal intimation to a friend or two, that he means to be at stated times in his office in this village, and in his office at such a time in another village, is he necessarily to be regarded with suspicion? Does he violate the spirit of the code? We think not. He has as good a right to establish his branch in Springdale and Sylvan Grove and Ten Mile, as a New York dentist has to reach across the Atlantic, and open his office in Paris and Berlin. He may, as a stranger, be regarded with distrust, but so we presume was his older-established rival and critic, when he came as a stranger to the town, years before.

We have no sympathy with the spirit of repulsion and even persecution, which some men in the profession feel privileged to exercise towards such as they deem to be invaders of their "staked claim." The code of ethics is designed to protect equally all practitioners who deserve protection, be they established in practice or not. But the man who drives up to your door, unrolls a diploma for you to admire and peruse, takes possession of your parlor table to display his instruments upon, and requests you to send out to all the neighbors and inform them that an opportunity, not likely soon to be repeated, now offers for having dental operations performed by a first-class dentist, is a professional—bore.

"It is unprofessional,"—the Article reads. There is no preamble setting forth that it had been all at once discovered that prompt, active measures were required to convince the dentist's patrons that, by virtue of the service he renders them, he ought to rank somewhat higher in their estimation than the bell-hanger or the carpenter. It is simply a statement of a fact, a fact attested by observation and experience. It is as if the Article had explicitly stated to the young dentist, if you ignore or neglect this seemingly unimportant matter, you will find your professional aspirations vain. This is not decreed by the American Dental Association. It is the inexorable decree of fate.

You start out upon the highway, and through by-ways, soliciting subscriptions for a book. It is an interesting, instructive, readable book. You convince yourself by honest argument that your undertaking is everyway commendable and worthy. You propose to give your purchasers the full worth of their money. You treat all respectfully and avoid intrusion where you find you are not welcome. The company that employs you to solicit for them, calls you an "agent." The public calls you a "book-peddler." After a while you rent a store and sell the very same book over a counter. You discover that you have become a "book-dealer." The store may be a small, poorly furnished one; and you may not sell one book now where you sold ten when you were soliciting orders, still you are called a "dealer," while your successor on the highway is called a "peddler." It appears, then, that this declaration of the code that "it is unprofessional to go from house to house" etc., is not of the nature of a papal "Bull,"—a dogma about which we are expected to ask no questions and venture no opinions. It is simply a concise embodiment of opin-

ion, matured by the tests of observation and experience. It commends itself to our approval because it says to the young man, society's opinions and decisions are arbitrary, they antedate all the opinions and decisions you find here recorded. It says to him, society admits many things to be respectable, but it seems to have established in a way which to many seems inexplicable, degrees of respectability, The "dealer" is respectable, the "peddler" is respectable, but society favors the one more than the other. This is human nature. It is not our business to apologize for it. Let us accept the fact, let us take advantage of it to elevate our profession as high as possible in the public's—in society's esteem.

That is substantially what the code says to the professional man. Has it a right to go a step farther and say, if you subscribe to the opinions here embodied, you must be bound by them; you must submit to discipline in case you willfully ignore or violate them? This code is not the law of the land, enacted to protect citizens in the right of life, liberty, and the pursuit of happiness. It is every member's privilege to criticise its articles and provisions, to discuss them in open convention, if he thinks they are unsound or unjust, to reverse his decision and withdraw his sanction if he finds that he cannot honestly approve of them. We may even admit that it is possible for a dentist to repudiate them *in toto*, and still retain a character as a respectable citizen. But self-interest, if not a regard for the welfare of the profession, ought to compel the wise man to subscribe to this code. Some of its restrictions may appear, in the letter, too stringent. Time and experience effect great changes in sentiment, and where special legislation was formerly thought necessary, more freedom may, perhaps, be permitted to-day. But that is a question to be decided by no individual member for himself. Let him who has an amendment to suggest, offer it formally in convention, and not undertake, on his personal responsibility, to establish a precedent.

THERE is less blood in cold-blooded than in warm-blooded animals. The larger the animal the greater is the proportion of blood to the body. Man has about a gallon and a half of blood, equal to one-thirteenth of his weight.

TEMPORARY TEETH.

BY E. J. LILLY, M.D., D.D.S.

SEVERAL days ago a gentleman, a stranger, called at our office, bringing with him his son, aged seven, who was suffering from a badly diseased temporary tooth. The father was one of those fussy, fidgety men, always making some remark, but never saying the right thing at the right time. The child was almost scared to death, and seemed about to collapse, when he discovered that he was at "the dentists." He had been systematically deceived, (ignorantly, we will say), in regard to the cruelty and "horridness" of a dental operation, and was consequently wrought up to that pitch of fear and dread, the spectacle of which ought to have shamed the man. We tolerated the latter's talk for a few minutes, then told him very pleasantly, but firmly, that we would take the boy into another room, and ascertain what could be done for him. After securing the little one's confidence by asking a few questions, and telling him a short story, we examined his tooth and told him what was necessary to be done in order to relieve him. He was then ready and willing to have his tooth treated, which was accomplished without any more ado, much to the surprise and gratification of the father. We then explained to him, as well as the limited time at our disposal allowed, the necessity and benefits of early consulting a dentist, he promised to be not so negligent in the future.

In dealing with children the dentist must be kind and considerate, but firm, and he should have a strict regard for the truth, deceiving in no particular. We must remember that they will be our future patients; and untruthful statements, rough manipulation, and a severe demeanor, leave the impression on the mind that the "horrid dentist" is a person to be avoided; and if we do not take pains to make it as pleasant as possible for them when young, in after life they will apply to us only as the last resort.

We presume most dentists have found (to their sorrow, perhaps), that operating for children is both difficult and tedious, and often requires great patience and self-sacrifice. But after gaining their confidence by ways which will suggest themselves at the time, and by gentle manipulation,—which may, however,

involve a greater sacrifice of time, and wear and tear of both mind and body, than is necessary in the case of older persons—the operation can be successfully performed. But it must be remembered in operating that the pulps of these teeth are relatively large, and come nearer the surface. The work, nevertheless, should be thorough, as the texture of these organs is such as to render imperfect fillings almost valueless.

We think the proposition will scarcely be denied that there is an unmistakable deterioration in the texture of the teeth of each succeeding generation; and in those instances where the parents, children, and grand-children, have come under our care, it is quite easy to see the gradual departure from the normal development. So the truth remains, explain it as we may, that the teeth of the majority of children now, as compared with those of their parents, are of poorer material, and fail to become as hard and dense as they grow older. But notwithstanding this, they can, with care, be preserved until their allotted time and usefulness shall have expired.

The deciduous teeth have, for the most part, received attention only when the sufferings of the child have rendered palliative treatment necessary, preventive treatment being comparatively a rare procedure. Cleanliness is as essential here as with the second set; and the first step should be to teach the use of the brush, and, when necessary, the removal of the staining or deposit which often adheres with such tenacity to the enamel. The use of the brush should be taught as soon as the child has sufficient intelligence to learn it; and previous to that time, the duty should be performed for him. They should be brushed at least three times a day, a soft brush, on which has been placed a little soap and powder, being used for the purpose, brushing up, down, and across.

These small teeth accomplish admirably the purpose for which they were designed, and it is our duty as dentists, when called upon for advice regarding them, to expend the energy, exercise the patience, and tolerate the annoyances necessary, in order to keep in condition to fulfill their functions, until such time as they will give place to the more permanent denture. There is a common belief among parents that the “first teeth” are unworthy of any attention except that given by the forceps. But they have a useful purpose to subserve, and are really indispensable to the health of the child. Besides, they bear such

intimate relations to the permanent ones as to render their preservation a matter of vital importance.

Temporary differ from adult teeth in size, form, and density, and require to be carefully dealt with until the possessor is old enough to do without them. Between the fourth and ninth year is the period demanding the most attention, the child at this time being sufficiently manageable. A pleasing story, or a talk about their plays or pastimes will almost always gain their good-will, and this is half the battle. Parents must be advised to have their children's teeth examined at intervals, and the importance of this should be impressed upon their minds. It is not enough to urge and persuade them to do this; we must, rather, make clear to their understandings the reason why one thing is right and another wrong. Mothers, especially, have a great tenderness for their offspring, for which reason it is easy to find an excuse for neglect. That they should be anxious about them at this time is perfectly natural; but that the solicitude should be carried so far as to deprive the child of needed assistance, is, to say the least, not wise. If parents would feel the weight of responsibility under which they are placed, and act upon it, their children would reap the benefits of greater care and attention than many of them receive. And if they were made to understand how much pain and discomfort could be prevented and spared their little ones, for whom they would sacrifice anything, the long and wakeful nights they are sometimes compelled to pass, the money to be expended in regulating and filling, and the many other troubles that might be avoided by timely care and attention, we are sure the responsible parties would thoroughly awake to their duty. Decayed, aching, and dead teeth are, oftener than may be imagined, the prime cause of weak eyes, ear-troubles, head-aches, etc.; and they may even cause deafness, blindness, and other ills equally as bad. Then let us endeavor to impress the important truth that prevention is always better than cure.

TEN quarts of normal alcohol have been made from six pounds of watermelon pulp. Free sulphuric acid was added, the mixture was warmed, and the sugar was changed into glucose and levulose. This product ferments directly.

Correspondence.

"I charge you that this epistle be read."

Editor Ohio State Journal of Dental Science :

I HAD occasion recently to administer gas, for the extraction of two cuspids badly diseased. When anæsthesia was complete I took hold of the right one and *laid* out my strength till my face was red and my breath about exhausted, and got it out. I then tried the other one, but I was so exhausted, (and the patient returned to a consciousness of pain), that I was compelled to desist.

After resting a little and getting my breath, I concluded to examine the tooth and see what was the matter with *me*. I found the tooth was "rather much" for me, being one and seven-thirty seconds (1 7-32) of an inch long; and as the cusp had worn off, it must have been more than one and a quarter inch long *when* it was younger.

This you may say, sounds like a fish story; but it is the truth and you can measure it—the tooth, not the story—and satisfy yourself.

It is a right superior cuspid, and unlike the Texas tooth, you exhibited at the Mad River Society, is from the right upper jaw,—no "right superior molar from left lower jaw" about this. The patient was a man about six feet in height, large bony structure, and spare in flesh, though not thin.

After satisfactory examination and verification, please send to museum of Ohio Dental College, if an anomaly of sufficient merit, otherwise you may send it to the bone mill, or any convenient place, and this communication with it.

A. J. GROSVENOR.

REMARKS.—By our measurement the tooth is an inch and a quarter long, the root being twenty-three twenty-fourths of an inch. But the diameter and length of the root are not the only, or main source of the trouble in extracting. Ossification of the periosteal covering had occurred, and as in extracting cuspids, but little is gained by rotation or vibration, this ossific deposit acts as a wedge, or as packing, thus greatly adding to the difficulty of main strength, direct extraction. We have had the tooth sometime, but will send it as requested.

PLYMOUTH, Wis., Nov. 21, 1884.

Editor of the Ohio State Dental Journal:

DEAR SIR—On Thursday, Nov. 20, 1884, I removed teeth from the inferior maxilla of a lady 40 years of age, some of which exhibited noteworthy malformation. Both canines appeared perfectly normal above the alveolus, with the exception of considerable caries. On extraction, however, two roots were discovered, one anteriorly and one posteriorly, of about equal length and breadth. The incisors contained but one root each with a deep groove on each side, almost severing the same in two. Below, on either side of the groove, was found a foramen leading into the dental canal, showing a division of the dental filament of the inferior maxillary nerve. Both bicuspid and molars were of normal construction, and all the teeth were extracted without any difficulty.

Yours Respectfully,

E. H. WANKO.

PITTSBURG, Dec. 17th, 1884.*Dr. Geo. Watt:*

DEAR SIR—An interesting case presented itself to-day, possessing the following peculiarities: The patient, Mr. J. W. O., native of northern Ireland, had consulted a physician for relief from severe pain in the left side of the jaw, together with inability to open it more than half an inch. Suspecting the trouble to be of dental origin, he referred the patient to me. I found a perfect set of thirty-two teeth; and, in addition, three supernumerary teeth, located posterior to the superior third molars, one being on the right, and the other two on the left side. The two on the left side had so irritated the surrounding gums and buccinator, (probably by biting the interlying folds), as to cause temporary ankylosis. I extracted these and he soon recovered his usual health. The teeth were about five-eighths of an inch in length, and resembled newly ruptured central incisors, *i. e.*, having serrated cutting edges. I send this as it may be of interest to some of the readers of the JOURNAL.

L. DUPUY, D. D. S.

Dr. Geo. Watt :

DEAR SIR—As you request me to give a correct account of the case that was reported in the *Cincinnati Gazette, Ohio Journal*, and other papers, as one of very serious consequences, and probable death, from the administration of nitrous oxide gas by me, I send you the following for publication in your JOURNAL.

On Saturday, Dec. 20th, at 2 P. M., Miss M—L—, æt 19, native, medium size, fair complexion, nervous sanguine temperament, apparently in good health, came into my office for the purpose of having the roots of a molar tooth removed and decidedly wishing to take “something.” I examined her in regard to circulation, and breathing, and found her a good subject, and directed her to undo her corset, while I called a physician, who also pronounced her all right. I administered the gas and removed the roots without any unusual symptoms, she recovering perfectly within two minutes, with the single exception of a headache, from which she said she had been suffering severely for several days.

She remained in the office until 4.30, while her friend was attending to other business, for two hours well, but the last half hour quite nervous. I directed her to be taken to a hotel, where she could rest until the midnight train, on which they were to leave, should go.

About 6 P. M., a messenger came for me, saying she was in convulsions. I immediately went to see her, taking with me a physician. We found her with well marked hysterical convulsions, every muscle contracted, her grip like a vice, teeth set firmly, every few minutes choking, which would result in coughing and throwing up blood, which all of us thought was from her lungs. Happily I soon thought to make an examination of her mouth, and found blood issuing from the socket of the extracted tooth, in quantity amply sufficient to account for all she was throwing up. I called the attention of the physician to this fact, and we at once laid aside all fear in that direction. Her lungs subsequently showed no signs of having suffered from hemorrhage.

She lay till the following Tuesday morning with only short intervals of relief from the muscular contraction, nearly all the time partially unconscious, visionary, calling for and holding conversation with her mother, who had been dead for years, calling

also for her lover, whose arrival had a decidedly salutary effect, from which time she grew better, and was able to sit up in a week, and was discharged by her physician a few days later. At no time during her sickness was there any elevation of her temperature, or acceleration of her pulse.

No less than five competent physicians examined her, and all agreed in saying that her case was plainly hysteria.

Now as to the cause: She had lately left home on account of opposition to the above mentioned lover, and that caused her much trouble. She had been suffering for some time with menstrual irregularities, a period being upon her at the time of the operation. She had been suffering about two weeks with severe toothache, losing much sleep. Three or four days previously her dress had accidentally caught fire, and partially burned off her, causing fright and severe shock to the nervous system. The day previous the tooth had been broken off, leaving the pulp bare, from which she suffered so much that she walked the floor all night. The bleeding, which no power could make her believe did not come from her lungs, coupled with the fact that her mother and other relatives had died with consumption, her constant worry about the expense (being a poor girl), all combined, with a probable tendency to hysteria, to place her in the condition that she was in.

I leave the question of whether the gas was a factor in the case to those who are more able to judge than myself.

Yours truly,

S. T. KIRK, D.D.S.

REMARKS.—The poor girl was not very well herself, and the long and strong series of mishaps had the nervous system ready for a crisis, and but a touch may cause an explosion sometimes in such cases. There was probably no increase of danger from using the gas, but we would not have used it at the menstrual period; and even if a hysterical crisis had followed extraction without the gas, there would have been less of fright and annoyance. When aided by the physician's counsel, no one can consistently censure Dr. K. The young lady was in a serious condition. The tooth broken off, the pulp freshly exposed, made a case that had to be a law unto itself. In general, teeth ought not to be extracted at such periods; but in desperate cases what

is to be done? When thinking of the treatment due to woman in her periodical trials, we are often reminded of an instance when we were a school visitor. A little colored girl was asked to spell and define the word pity. Her smaller brother stood beside her. She spelled the word correctly, and added, "To feel kind for Sammy, and pat him on the back;" finishing the definition with her hand. The hemorrhage in this case was probably vicarious in part; and we can see no room for unkind criticism of Dr. K. It is a misfortune to have to operate for a patient with nerves so severely strung.

Compilations.

"Gather up the Fragments."

PERSONAL RECOLLECTIONS OF A DENTIST OF THE EARLY DAYS.

BY DR. L. W. BRISTOL, LOCKPORT, N. Y.

[Read before a Union Meeting of the Seventh and Eighth District Dental Societies of the State of New York, held in Rochester, October 28 and 29, 1884.]

Published at the request of the Societies.

THE practitioners and students of dentistry of the present day know little of the difficulties and disadvantages under which those practicing fifty years ago labored. There were no dental colleges, no dental depots, no dental instrument makers, and in the country no regularly settled dentists. They traveled about with their "kits" under their arm.

The teeth used in those days were human teeth, procured from the battlefields or hospitals, preserved in jars with spirits of camphor. They used to say of a prosperous dentist: "Why he is rich, he has a whole keg of teeth." They also used the teeth of neat cattle, or carved them out of a block of hippopotamus ivory, leaving the enamel in front, like the sample I will show you.

Dental laboratories were sealed sanctums, within which no other dentist was ever admitted. Dentists never recognized a

lady or a clergyman in public, now matter how intimate they were in private, for people would say, "he has been putting in teeth for them."

There were fanatical people in those days, just as there are now, only more so. They quoted the passage of "An eye for an eye, and a tooth for a tooth." The Quakers, my ancestors, had these words always upon their lips, arguing that if it had pleased Divine Providence to remove a tooth, or an eye, or the hair, it was sinful to oppose the will of God by an attempt to replace it by artificial means.

If a man in those days desired to enter the dental profession, and thought he had ingenuity and mechanical skill enough, all he had to do was to throw down the lap-stone, hang up the strop, throw away the press-board and goose, or the printer's rule, and go in on his nerve. In the first place he had to make his instruments, and this required mechanical skill. If he found a piece of work that some other dentist had done you may be sure he examined it carefully and closely. I well remember that in 1833 I went three miles to see a man who had two false teeth. They were made of "sea-horse," and attached to adjoining teeth with fine gold wire that had cut the teeth they were attached to nearly one-third off.

I have instruments in my possession to-day that I made forty years ago, and they are yet doing good service. Many an engagement have I filled by sneaking around just at daylight, by the back way into a back chamber, to prepare and insert two or three teeth for a young lady, making a long, tedious day of it, always stipulating that the cross dog should be chained or shut up.

We first, by measurement, fitted a block by the right curve to fill the space to be supplied with teeth, and then, with a camel's hair pencil dipped in rouge mixed with alcohol, painted the gum and pressed the block on to receive the red impression, then carved, scraped, gouged, and dug, painted and tried again, and so on, until a perfect fit was secured. We then proceeded to carve out the teeth, leaving the enamel in front. It was rude looking, but it filled the bill. We saved every root, and pivoted to it, sometimes fitting six teeth to two roots. If the roots were gone, we tied the blocks in with silk thread, or gold wire.

I have seen a block of six teeth pivoted to the canine teeth, worn until they could be removed and cleaned, roots and all, then

put back and worn for a long time afterward without any apparent inconvenience or inflammation. You see that the new process of bridging in blocks of teeth is no new theory. I well remember when a great discovery was made; that of taking an impression of the mouth with wax, and pouring in calcined plaster of Paris. Oh! that was a most wonderful discovery, and it was kept a secret for a long time by the knowing ones; but it finally leaked out. If we happened to meet another dentist, and he was anyways inclined to be social, you may be sure we "set 'em up" frequently, and when he was "full" we warmed the secret out of him, if he had one.

Following the carved work came the old French Bellah teeth, of which I will show you specimens. They were mounted on gold plate with a dowel pin soldered to the plate, and this soldered to the platina clamps baked in the tooth. You will see that they were opaque; a muddy hue; no life-like shade. Still they did not look bad in the mouth of an aged person. Then came the Stockton pivot teeth. They were a great improvement in their life-like appearance. Dentists advertised the "Silicious incorruptible teeth," "diamond," "pearl," and lots of other fancy names. We struck up a plate, soldered the gold pins, and attached the teeth with hickory plugs; immersed them in water twelve hours or more, and then with a good deal of anxiety removed the plate and examined to see how many had burst by the swelling of the wood. We always directed our patients to keep them wet. If the patient was ill, and by carelessness the teeth were suffered to get dry and tumble off, they were brought back to be again put on where they belonged, and it was quite a job sometimes to get them right.

Stockton sent out his teeth by the peck. I remember that an old man used to come around about once in six months, with an old striped bag full of them. He would pour out about a couple of quarts, and we would make our selections.

Next came the single gum teeth of Stockton, with platinum pins baked in the tooth. When Stockton first manufactured his single plain and single gum teeth, with platinum pins to be backed with gold and soldered to the plate, he kept it a secret. He had a large stock of pivot teeth on hand. He sent out peddlers in every direction, put the price down to ten cents each, for Mr. Stockton was "going to change his business." The agents

did not say directly that he was going out of tooth making, but hinted as much. The consequence was that every dentist laid in a big stock, used all his ready money, and borrowed more to buy teeth.

In about one month other agents came around with the improved teeth. We were all sold; had to abandon the old pivot teeth and use the new. Then there was some tall swearing at the trick. Tieman, the instrument maker of Chatham Street, had bought a heavy stock. You ought to have heard that old descendant of father Abraham curse Stockton. But it was of no use. He had to succumb to the inevitable.

About 1834 the dentists began to establish offices, or rather rooms, usually at their residences or boarding houses. Ladies and gentlemen, and sometimes a clergyman, were seen calling on them. If a student desired to learn the profession he had to pay liberally for his instruction. I paid a dentist, whose office was under the printing office in which I was employed, fifty dollars for the privilege of getting into his office for one year. He was to answer any question pertaining to the business—truthfully if he could—and I was to come whenever he called me to hold his patient's head, when a tooth was to be extracted. Dentists in those days never attempted to extract teeth without some one to hold the head.

It has been said that history repeats itself. In those days we used to replant and transplant teeth; but we soon found we not only transplanted teeth, but scrofula and other diseases, and the practice was declared "malpractice" and abandoned. In filling teeth we used lead, pounded very thin, and tin foil. As for gold, the only wonder is that we made as permanent fillings as we did; the foil was so harsh and brittle. We always filled the teeth so as not to have the fillings show. If they did, or a gold clasp was visible, our patients always found fault. How changed the tastes of people now. Richmond gold crowns and contour fillings would then have been declared unnatural. If a tooth was gone we tried to replace the same with one as near the shape and color of the other teeth as possible.

About the year 1833 or 1834, I have lost the exact date, the notorious Crawcours of London and Paris opened an office in New York, and six or eight months made a small fortune by filling teeth with amalgam, asserting its qualities to be that of

“making a stump into a sound tooth at once, as if by magic!” They called the compound “the Royal Succedaneum.” These Crawcours, were the father, mother, brother, and sister of the amalgam practice. They used the old French five franc pieces, filed up and mixed into a soft paste with mercury. Many people who had good serviceable gold fillings, that had stood a long time, had the gold dug out and the amalgam substituted, “because the gold showed.” These Crawcours had a successful run of it. They were not dentists, and knew but little of the profession. When they found that warrants were out for their arrest they dug out, took a packet ship, and were well out past Sandy Hook before the officers got after them. They brought amalgam into bad odor, but after a few years the profession got to using it again, although there then was, and is now, a good deal of opposition to it. It is only within a few years that we have learned to properly use it, and to succeed in making good fillings.

Of the bases for artificial dentures we have had gold, silver, porcelain, gutta-percha, pyroxyline, rose pearl, aluminum, platinum, celluloid, rubber and Josiah Bacon. In 1838, when I was located in Syracuse, practicing with Dr. Bliss, there came into the office one afternoon a lady who showed us a set of gum block teeth made by Dr. Thos. Harrison of Lockport. They looked natural, fitted well and it was the best piece of work we had ever seen of the block gum teeth. Bliss said to me: “You are young and have no family; suppose you go to Lockport, get acquainted with him, learn his method, and come back, and we will form a partnership and do that kind of work.” I thought the matter over and decided to do so; I packed my gripsack, took the grand old Erie Canal for Lockport, where I arrived in good time, and found Harrison was at Lewiston. I took the stage for that place, where I arrived about eleven P. M., and found him at the Lewiston hotel, lying in the corner of the bar-room, behind the stove, pretty drunk. The prospect did not look promising, by any means. Next day I made his acquaintance, told him what I was after, and proposed to help him. He consented, and I assisted him to sober up, got his hair cut, bought him a new suit of clothes, and he made quite a respectable appearance. We went to Lockport, took a back room in the third story of a block, put up a furnace and commenced business. But I found that the work did not stand the test of time in the mouth. The pieces were porous,

absorbed the saliva, and soon became discolored. We could not repair by reheating, for they would fly all to pieces, and pop like corn. He kept no record, never weighed the ingredients, guessed at the amount, and as a consequence never had two bodies alike.

Here let me say that I have spent more time, passed more sleepless nights sweating over a hot furnace trying to surmount difficulties, or making block gum teeth moulded over a cast of the mouth, and to be worn in the same mouth from which the cast was taken, than over any other branch of the profession, without ever having succeeded or been thoroughly rewarded, and I never expect to be; the shrinkage, warping, checking, bulging, never has been overcome. The composition of the block must be so equalized that while some of the materials shrink others must oxidize and increase in bulk. This retains the shape of the cast, but makes the body porous. Then you rely on enameling to fill the interstices. It will do this, in a measure, on the surface, but not all through the body, which will absorb the fluids of the mouth, with some patients more than others.

John Allen, of New York, came the nearest to perfection of any man, but his work failed in time. His method had the advantage of using teeth already baked. A platinum plate was swaged, the teeth backed with platinum and soldered to the plate with fine gold foil. The interstices were filled with a granulated body, the piece invested in asbestos and plaster of paris, and baked. Then it was enameled and baked again; but to an experienced eye, in a strong light, cracks would be apt to show on cooling. By oiling the block the checks would not show; but time and human saliva are very searching, and when a plate began to give out it went all to pieces. It had one advantage; it could be re-enameled and baked again.

About 1835 or 1836 Creosote was introduced to the public, and created a good deal of interest in the medical and dental professions. Some dentists went so far as to say that they had abandoned extracting teeth, and one in Syracuse advertised in large letters on the awning posts, the whole length of a block: "Toothache cured by Creosote without extracting." He charged one dollar for introducing a small pledget of cotton saturated with Creosote, and covered with gum mastic and turpentine.

A great many discoveries and more valuable improvements were made. One dentist in an eastern city, had very delicate

instruments with which he "cut the ligamentum dentatum," and the teeth tumbled out easily, and our patients would ask us, "have you got an instrument to cut the ligamentum dentatum?"

In 1837, a dentist by the name of Jacks, of Catskill, invented and patented a double air-chamber plate along the alveolar ridge. This chamber was perforated with one-eighth inch holes about half an inch apart, and soldered to the main plate. The patient sucked the gum into the holes as one would suck a key on the lips, and, if worn long enough, the "teat" would become strangulated and drop off, remaining in the air chamber which would also become filled with food, mucus, etc. There was no way to get at it to cleanse it, and it made one of the most filthy dental structures, imaginable to mend, and forced one to open his doors and windows to let out the stench.

Another dentist patented flexible rubber air chambers, and sold the exclusive right to any dentist in the locality who would pay the highest price. The flexible had quite a run for a time, but the rubber decomposed in the mouth, and the dentist soon had all he could do repairing plates broken through the centre, and the patent went into oblivion.

Some one has said that instead of going to California to-day for gold, it would be better to go to our cemeteries and get the gold buried with the dead. I have taken some pains to examine the assertion, so far as my own practice is concerned, and I have found that from 1839 to the introduction of rubber work, the average amount of gold plates, gold solder, and gold foil used in my practice, amounted to a trifle over thirty-one dollars each month. One can see that if others in the profession used the same amount (and many, probably, used more), a vast amount of gold is buried in our cemeteries.

In 1848, Morris Levett patented an enamel for coating a silver or gold plate the color of the natural gums, doing away with gum teeth. A man by the name of Englebright was the agent to sell the same. He was a sweet talker, and showed many specimens of gold and silver plates enameled. They looked well, and seemed to be a desirable improvement. Levett said he had sold over forty thousand dollars worth in the last three months. He came to Buffalo, visited the dental offices, and offered to sell office rights, but preferred to sell territories. We met at the office of a prominent dentist to see the enameling process. I was

requested to conduct the experiment. While doing so, first one would retire with the vendor, then another; finally the dentist in whose office we were retired and had a private talk, and when they returned we were told that the doctor had purchased the exclusive right to the county of Erie, and if we wanted an office right we must apply to him. He had not made up his mind yet what would be the price, but would let us know in a few days. We all looked chop-fallen, took our hats and stepped down and out. After I retired to bed, the thought struck me that the enamel I had used in making artificial eyes might answer the purpose. The next day I tried it, and found it worked equally as well as Englebright's. I enameled a plate, showed it to him, and he would not believe but that I had used Levett's, until I enameled another piece in his presence, when he was satisfied that Bristol's artificial eye enamel would do as well as his.

He had taken in part payment for the exclusive Erie County right a gold watch valued at one hundred dollars. He gave half of an office right to me for Lockport, valued at twenty-five dollars, if I would keep still. Having occasion to visit Lockport, where my family resided, I found Englebright there. He had got the dentists all excited. I had given him an order on my partner for his half of an office right. In the evening they all met at my old office, and again I was requested to conduct the process. While doing so the old game was repeated; first one would retire with the agent, and then another. Finally Dr. O. W. May offered him his house and lot for the State of Pennsylvania. I tried to stop May, but it was of no use. He was bound to get rich out of the enamel. Englebright called me out and said: "Your family is sick, and you know too much. Take this gold watch and clear out. Stay away from Lockport one week." I pocketed the watch and left, next day returning to Buffalo. In about a week Englebright returned to Buffalo. In the meantime one Buffalo dentist had written east, and found the thing a humbug, and threatened the agent with prosecution for fraud. They finally compromised by the agent giving back the watch and part of the money, he taking back the right to Erie County. He came to me and said if I would give up the watch he would have the right assigned to me. I did so, and am still the sole owner of the right to Morris Levett's enamel for Erie County. If any dentist in Buffalo wants an office right, let him come to the cap-

tain's office, and I will give a license to enamel for life, free of charge. Don't you call that liberal?

When I look back along the pathway I have trod in dentistry, it is gratifying to observe the great improvements that have been made from time to time. The profession, from a small number of self-educated men, jealous of each other, has now become a multitude of liberally educated men, ready to impart to one another all desirable discoveries and improvements, all trying to elevate the practice. It is especially gratifying to me that I was one of the four who shook hands on the platform of the depot at Trenton Falls, pledging ourselves to go home and set to work to found "the Western New York Dental Association," and to invite all practical dentists west of Cayuga Bridge. This we did, and the call was signed by B. T. Whitney, Buffalo; Geo. E. Hays, Buffalo; E. F. Wilson, Rochester; L. W. Bristol, Lockport.

At the first meeting B. T. Whitney was elected president. We had a largely attended meeting, and a kind of dental love feast, at which some acknowledged that they had done things in the past which were unprofessional, but they would do so no more.

That association was the entering wedge that culminated in our present State Society and Law. Two of the men that signed that call have gone to their long home, honored and beloved by all their professional brethren, and their memory will always be cherished. Two are left to hope and pray that a still brighter and better future is in store for those practicing the profession throughout the United States.

I have had my day, and it has, in a measure, been a stirring one. I am now getting old, and my locks are whitened. You have urged me, before I have left you forever, to give you some of the reminiscences of early dentistry. This paper is in response to that request; it is necessarily a thing of shreds and patches, but it will give you some idea of what we older ones have passed through, scenes never to be re-enacted. We old heads must now step down and let you younger men have your day, and I hope it will be a better one than ours has been.—*Independent Practitioner*.

MANGANESE must be widely diffused in nature. It has been found in thirty-four samples of wine, in cereals, and in almost every description of rock.

Editor's Specials.

"Write the Vision and make it plain."

THE NEW ANÆSTHETIC.

ITS FIRST TRIAL IN DENTAL SURGERY—FOUR HIGHLY SUCCESSFUL OPERATIONS.

YESTERDAY morning at 10 o'clock, in the hall of the Dental Department of Vanderbilt University, Prof. W. H. Morgan conducted a brilliant clinic in the presence of members of the faculty and an enthusiastic class. The first case was an inferior wisdom tooth, overgrown with inflamed and exquisitely sensitive gum tissue. A drop of a four per cent. solution of hydro-chlorate of cocaine was applied to the sensitive structure on a bit of cotton, and at the expiration of four minutes the parts were freely incised, the patient declaring that he felt no pain.

The second case was an exposed and highly inflamed tooth pulp. The anæsthetic was applied as before, and after the lapse of three minutes and a half the Professor thrust his instrument into and tore away a portion of the offending organ, while a pleased and gratified expression played about the patient's countenance. The professor announced that this was ordinarily one of the most painful operations in all minor surgery.

The third case was the extraction of a superior second molar, a firmly attached tooth, though ulcerated. In this case a small rope of cotton was wound around the tooth, saturated with about two drops of a five per cent. solution of the oleate of cocaine, and brought in contact with the gums, waiting seven minutes for complete absorption. The tooth was extracted without causing the slightest pain.

The fourth and last case was an inflamed cavity, the result of rapid decay, and which could not tolerate the touch of an instrument. After five minutes application of the five per cent. oleate solution the cutting and removal of the decayed tooth-bone was accomplished without the least pain.

One could not witness the series of operations without a feeling of awe and admiration. The result seemed so like magic.

The faculty and students acknowledged their indebtedness to Mr. William J. Evans, agent of the house of McKesson & Robbins, wholesale druggists of New York, for the anæsthetic used in these operations, and also for interesting and instructive remarks on the habit, history and preparation of the remedy.

It has been contended by physicians and scientists that the new anæsthetic, hydro-chlorate of cocaine, being local in its effects, could not be used satisfactorily in the extraction of teeth without pain. Dr. J. F. Stephens made a test of this matter yesterday, which proved highly successful. He extracted five teeth for a lady, and she said that though her face was very sore from long suffering, she felt no pain whatever after the anæsthetic was applied.

The above is taken from the *Nashville American*, for December 14th, 1884, and comes, or rather, was sent to us in response to our enquiries in reference to the new anæsthetic. As dentists gave the world the great boon, anæsthesia, it is but proper and consistent that they should still continue prompt and zealous in the investigation and testing of everything new in this line of practice. Though the above item is from a newspaper, and not from a professional periodical, and though there may, therefore, be some inaccuracy in statement, as the article is evidently written by a layman, and though it, to some extent advertises a certain firm in pharmacy, we waive all, and insert it, because we regard the news as important. Few in our profession are more capable of giving the new agent a proper test than Prof. W. H. Morgan. We know him; and can rely on him; and if this newspaper item was not substantially truthful and accurate, he would not permit it to go uncontradicted or uncorrected.

If this new medicinal agent so promptly allays the pain resulting from excavating sensitive dentine, it proves itself invaluable. Perhaps nothing else in dental surgery is so annoying to the operator, and at the same time, so distressing to the patient.

Then look back to the report of the third case in the clinic, and the extractions by Dr. J. F. Stephens. Though some in our profession sneer at extraction, and profess that they never extract, some, if not all such making true profession, yet, in the nature of things, it will be necessary to extract teeth; and for some considerable period yet in the world's history, extracting will be the

most frequently performed operation in surgery, while unstripped of its natural terrors it is among, if not the most painful of all operations.

We once saw a man with five gunshot wounds received in battle. In dressing these, two musket balls were removed by cutting down upon them, and all was done without anæsthesia, yet the man held himself quiet and still. We had seen the same man have a tooth extracted, and he screamed and jumped as if being murdered.

Of course teeth are now extracted that ought to be preserved. And it will take a long time to bring about a state of public and professional sentiment that will prevent this. It may require even the arrival of the "good time coming." Hence, if the dread mutilation must still be practiced it should be shorn of its terrors as much as it can be by the progressive attainments of science and art. Both skill and knowledge must contribute all they can to this end.

It has been argued in our profession, by a few individuals, that the mitigation of the pains of extraction is wrong, because it leads patients to have teeth extracted that ought to remain. But an argument that proves too much proves nothing. This position, carried to its legitimate bearings, would drive us back to the old turnkey, and its kindred implements of torture; for by the improved forceps, etc., extraction is robbed of half its terrors, as any one will realize who has enjoyed the tender mercies of the turnkey fiend. The position would condemn anæsthesia altogether, and enough besides to roll us back into the dark ages of surgery.

Once in our experience, when practicing neither medicine nor dentistry, but when engaged in a mixed course of experimentation, the words "nitrous oxyd," on a narrow strip of tinned iron, were placed beneath our sign. A well-known and talented specialist, now further west, looked at it and said, "physicians would not tolerate such a thing." We replied "they do tolerate a similar thing." Where?" said he. "You are a vice president of a medical society, and look at your sign," we replied. "Are they alike?" said he. "Not quite, mine would need to read, *gasist* and *pullist*, to make them equal," we replied. He walked to his office and stripped his sign appendix from the wall, and we

as promptly gave ours the same treatment. Yet when thus engaged, we did not extract twenty per cent. of the teeth we were asked to extract.

If, as indicated by the second case of this clinic, incurable pulps can be painlessly removed, very many teeth will be preserved in a state of usefulness, that have been hitherto sacrificed. The fearful pain of the operation of extracting living pulps, has induced many practitioners to destroy their vitality with arsenious acid, as a prelude to the operation; but ordinarily, this is, sooner or later, the destruction of the tooth. Besides, it has been almost impracticable to extract living pulps, except from nearly straight canals. But all know that when their vitality has been destroyed by arsenious acid, or otherwise, the operator can work leisurely and patiently, without hurting the patient, and thus succeed in the complete removal of the contents of the pulp cavity, which prolonged work and could not be endured if the tissue were still alive. Now, if the new anæsthetic, even by repeated applications, is able to completely prevent pain, a like completeness of removal can be attained, with the pulp tissues in possession of their native vitality, and the pulp cavity and canals can be filled with the satisfactory assurance that the periosteum has not been poisoned. Many teeth may be thus saved for an ordinary lifetime, that, by the arsenical method, would endure but for a few years, if the new anæsthetic, on further experience, is found to possess the properties indicated by this case in the clinic.

Even the first case reported in the clinic required what is ordinarily a very annoying and very painful operation; yet as this was completed, we find "the patient declaring that he felt no pain." And the operator and witnesses give no intimation that they disbelieved his statement.

Since we last referred to this new anæsthetic, we have seen numerous accounts of its successful use. The uniformity of the testimony in its favor inclines us strongly to hope that it possesses the properties claimed for it. We give this newspaper account this attention partly because it is directly in a line with the experiments we requested our brethren to try. Again, we know and *believe in* our professional brother, Professor Morgan, with a clearer knowledge and a stronger belief than usual. We feel about as well satisfied with these trials and experiments of his, as if they had occurred in our own practice.

We invite others to report for the JOURNAL an account of any cases that may occur in their practice that will throw light on the nature and uses of this agent. If it was Prof. M. sent us the paper we thank him; if not, we thank the sender at random.

A NEW LETTER AND AN OLD ONE.

“OLD things are passed away; behold all things are become new.” This is a broad, philosophic, general statement made by a great writer in reference to the state of affairs when a lost man has been renewed,—that is, found again. Old papers often become new. Indeed they become *news*-papers, inasmuch as descriptions of what was going on at the dates of their respective issues, are now fresh, and interesting news items.

Our Publishers, Messrs. Ransom and Randolph have furnished us a letter from the well known manufacturers of fine gold foil, Messrs. Hood and Reynolds, which contains interesting information in reference to the discoloration, or darkening of gold fillings in the mouth. The older readers of the JOURNAL will remember how annoying this used to be. More than once we have heard this matter discussed in the Mississippi Valley Association; and once, by general understanding rather than by formal appointment, the late Dr. A. M. Leslie and the writer were regarded as a committee to investigate and report on the subject. But, after the letters have been read some additional remarks that may be appropriate will be better understood. And first, read the new letter:

BOSTON, Dec. 27th, 1884.

Messrs. Ransom & Randolph, Tolèdo, Ohio.

GENTS:—Some years ago we were interested in the discoloration of gold in the mouth. After many experiments we were satisfied that it was no fault of the gold. The writer had gold made alloyed with iron, and had two teeth filled with it. This gold would turn black by annealing red hot; but it failed to discolor in the mouth in four years of wear.

If you want to publish this in the JOURNAL do so. We also enclose a letter from the State Assayer.

Respectfully,

HOOD & REYNOLDS.

The letter of the State Assayer, referred to by Messrs. Hood and Reynolds, in their letter above, is the one our heading alludes to as the "Old One;" and it is as follows:

No. 4 State Street,)
BOSTON, May 14th, 1878. }

Messrs. Hood and Reynolds.

GENTLEMEN:—I have been interested in analyzing some blackened and discolored gold fillings that had been removed from teeth, and which I received from you several days since.

You are aware that the cause of the blackening of gold fillings, under varying conditions, in the mouths of different persons, has not been satisfactorily explained.

The first and natural thought of a layman is that the gold is impure; but as there has been no success in producing this black color artificially, or by adding impurities to the gold in order to cause it to turn black, and as the effects obtained in different mouths with the same gold are so unlike, it was not unreasonable to believe that the blackening did not arise from impurities, or from other metals alloyed with the gold.

The pieces received from you, when examined under the lens, exhibited a distinct black covering or "scale," upon the upper, exposed surface, in each instance, which it was possible to separate from the bright metal below. This black material was found to be slightly soluble in hydrochloric acid, but it did not contain any traces of other metal than gold, nor did it contain sulphur or any of its compounds.

In proceeding with the analysis, I first boiled the blackened gold in hydrochloric acid and washed it thoroughly, thus removing all extraneous substances. I then treated it with chloric acid, which was found to dissolve and oxidize the black compound much more rapidly than it did the metallic gold. The solution obtained in this way yielded phosphoric acid, thus demonstrating the presence of phosphuretted gold, in the black compound. The black material on these fillings, was therefore, black *phosphide of gold*, a salt known to chemists and one that it is not at all surprising to find formed in the mouth, although its presence seems to have been unsuspected. Respectfully,

S. DANA HAYES,
State Assayer, Massachusetts.

P. S. Messrs. Hood & Reynolds.

GENTLEMEN:—Phosphide of gold is a very rare substance that you will be unable to find. But there is a description of it in *Watts' Dictionary of Chemistry*, and elsewhere. It is hard to make.

Respectfully,

S. DANA HAYES.

It is almost certain that there is a cause of darkening in gold fillings still different from that mentioned above, and so minutely and clearly described by the able authority above. If we are not mistaken the phosphide of gold, referred to by Assayer Hayes, is a jet black. We were annoyed many a time by a darkening on fillings which, although in some conditions of light it seemed black, was more of a purplish hue. We are not good in distinguishing colors, though not color-blind, by any means; and hence we rely more on the testimony of others than on personal observations when we speak of it being of a purplish tinge. This color was sometimes noticed on the most popular and most generally used foils. In this discoloration, Dr. A. M. Leslie, a most excellent metallurgist and a good chemist, claimed to find traces of iron, and so stated verbally in a meeting of the Mississippi Valley Association. Our own experiments reached the same results as those reported by Dr. L. We never experimented with the jet black darkening, and hence we are all the more interested in the report of Mr. Hayes.

It may be known and remembered by some of our more aged readers that we formerly used extensively in filling teeth, a crystallized gold of our own preparation. An early step in the process of preparation was to purify the gold, which we always accomplished by one of the "wet methods." In most instances the gold was precipitated by the proto-sulphate of iron. After precipitation and drying, it was sometimes digested in dilute sulphuric acid, for a time, and sometimes not. In either mode of preparation the darkening seldom occurred, and, therefore, only in a few mouths. After the researches and report of Dr. Leslie we selected a few patients who had darkened gold fillings in their mouths, and we filled some cavities in their teeth with gold prepared in the one way, and some with gold of the other mode. In these mouths the gold which had not been treated with sulphuric acid darkened, while the other remained bright. We extended

these experiments over a series of years, and with uniform results. Direct light showed that the darkened surfaces were not jet black, though in some positions they appeared to be. After adopting the plan of digesting the precipitate, as described above, we had no trouble with our "crystal gold" discoloring.

Dr. Leslie told us, in private conversation, that he thought this darkening was more likely to occur in mouths having a trace of sulphur, probably the "sulphocyanogen" of the older writers. But he had not experimented as far as we know, with cases like those of the State Assayer, as above described.

ANALYSES OF FOOD.

IN a long and interesting article in the *Pharmaceutische Centralhalle*, on the nourishing powers of various natural and artificial foods for infants and invalids, Dr. Stutzer, of Bonn, gives the following results as far as concerns their nitrogenous constituents:

	Flesh Formers, per cent.		Flesh Formers, per cent.
Caviare, ...	25.81	Condensed milk, ...	8.79
Ervalenta, ...	19.93	White bread, ...	7.20
Smoked ham, ...	18.92	Biscuit, ...	6.71
Fresh beef, ...	18.53	Oysters, ...	5.78
Fowl (breast), ...	16.56	Cow's milk, ...	4.00
White of egg, ...	13.48	Extractum carnis, ...	3.40
Yolk, ...	13.01	Malt extract, ...	0.28
Infants' food, ...	9.90		

The above table gives rise to some curious reflections. The wonderful nourishing powers attributed to oysters are found to dwindle into insignificance when compared with other food; for instance, a single hen's egg contains as much nourishment, that is to say, as much flesh-forming material, as fourteen oysters, while a quarter of a pound of lean rump steak is equal to about five dozen of these delicious but delusive mollusks.

With regard to condensed milk, it contains much less flesh-forming material than is generally supposed. Taking four per cent. for cow's milk as a fair average, the directions on the cans, if followed out, give unexpected results. For children's use, we are told to dilute the condensed milk with four or five parts of water. Taking the lowest figure, we should then have five parts

of diluted condensed milk, which, according to Dr. Stutzer's figures, would only contain 1.76 per cent. of flesh formers, of four per cent., while the milk sugar would be increased from 4.5 to 10.85 per cent. We know that woman's milk contains more sugar than cow's, but still not in the above surprising proportions. Now that so much canned milk is used for infants brought up by hand, it becomes a question how far mothers who cannot suckle their children are responsible for the health, and even lives of their children, by giving them milk from the tin cow instead of the living animal.

Dr. Stutzer's figures also further expose the often exposed superstition about the nourishing powers of beef tea. He extracted all the extractible matter from 100 grams of beef with 100 grams of water, and a good proportion of salt, at a gentle heat for four hours, but could only succeed in obtaining in solution one-twelfth of the nourishing matter of the beef, the remaining eleven-twelfths remaining behind in the *bouilli*. In other words, we should have to take half a gallon of beef tea made with a pound of beef and a pint of water before we got as much nourishment as is contained in a quarter of a pound of steak. We might, it is true, evaporate our beef tea down to, say, half a pint, but we doubt if it would be palatable to the least squeamish invalid. The high value of eggs, too, is well shown; in fact, roughly speaking, a couple of eggs weighing three and a half ounces, are about equal to two ounces of good rump steak.

Dr. Stutzer, in the course of his article, mentions three samples of cocoa warranted free from fat (*entolter Cacao*), from different houses, which contained, respectively, 33.48, 32.31 and 30.95 per cent. of fatty matter of some sort!

The highly nourishing powers of caviare will no doubt strike the "general" with amazement.

With the law of libel in its present condition, we have been obliged to omit names, but Dr. Stutzer either has not the fear of the law before his eyes, or they "order these things"—legally, at least—"better in Germany."—*The Chemists' Journal*.

REMARKS.—Dental surgery is, to a considerable extent, founded on the wants and demands of the nutritive functions. The above may be, therefore, interesting to the readers of the JOURNAL. If these analyses are reliable, and they are from high authority, they expose several fallacies. For example, the popu-

lar sentiment awards great nutritive properties to oysters, yet it is well known that they are treated as light food. They are eaten late at night generally with impunity, disturbing neither rest nor digestion, which would not be the result if they were strong diet. And if malt extract stands so low, who needs ale or beer to brace up the system? Certainly not the nursing woman, who, in using the fermented drinks, turns her own milk into a still-slop mixture.

Then look at *beef tea*, so renowned in the popular mind, and so often recommended even by physicians. It is called in the table *Extractum carnis*. But a few weeks ago a physician was giving it to a sinking patient, who was disgusted with the thought of it, telling her and her family that all the nutritive principles of the meat were retained in it, and digested ready for direct assimilation. Yet he was simply starving his patient. But let the reader study the article and make his own comment.

ROBINSON'S REMEDY (?) AGAIN.

IN the JOURNAL for December, 1884, we noticed the above named compound; but being not now in active practice, we had not enjoyed the opportunity of testing it practically. We had so much confidence in Dr. R., that we gave an account of it on his own testimony; and we still have so much confidence in him as an observer and experimenter, that we believe he will be able to explain what follows, and help our good brother out of his difficulty, in the preparation and use of the "remedy."

It is often difficult for two persons to get the same results from chemical experiments with the same re-agents.

We give information from a private letter, withholding the name of the writer, in order to set forth the difficulty experienced by one in attempting to prepare and use the Robinson Remedy. We feel that in this course we betray no confidence, while we put the matter into the best shape for obtaining further light. The following extract from a letter on the subject will explain itself:

" . . . , Dec. 15, 1884.

"DEAR DOCTOR—Having a desperate case of "Riggs'" disease to treat, I was moved to try the recipe given in your last, of the

"Robinson Remedy." I gave it to one of our best pharmacists, with strict injunctions as to care and accuracy. He reports that equal parts caustic potash and crystallized carbolic acid will not make a *paste*, but makes a *powder*. By adding a little water, a paste was secured, but so strong that I don't dare to use it. It eat a hole through a cat's ear between night and morning, therefore I ask for more light. If our friend Robinson has such a remedy as you describe, I should like to get hold of it," etc., etc.

"Sincerely yours,

"—— ———."

We shall be glad to have further light from Dr. R., and perhaps he will have no difficulty in explaining the cause of the trouble, and directing the means for its removal. It is barely possible we have not correctly given the relative quantities of the acid and alkali to be used, but we feel almost confident that we accurately copied his directions in the *Register*, as well as in the hastily prepared paper he furnished us in reference to the matter. The pages of the JOURNAL are open for anything proper in this line. It is well known that carbolic acid and caustic soda combine, and mutually destroy each other's caustic properties; but a few hours or days are required to complete their chemical union.

APOLOGETIC.

THIS number of the JOURNAL has been the most difficult to get out, as far as the editor's labors are concerned, of any during its brief existence. A hard fall on frozen gravel, breaking a rib, bruising and cutting the face, and severely jarring the brain, etc., succeeded in laying us on the shelf; and from this our work on this number has been done. We expect to do better with the next issue, and hope our contributors, and all who have anything to say to the profession will write out their thoughts and send them promptly to us. They will look well in the neat pages of the JOURNAL.

OUR friend and occasional contributor, DR. FRANK A. BREWER, has been lately bereaved by the death of a daughter, a bright young lady of twenty years. How sad that one so young and full of hope is snatched away while old, worn out and useless

individuals, like the writer of this, are left. But no doubt Heaven is brightened by such accessions, while down here such dispensations look dark and gloomy. Dr. B. and his estimable wife have our strongest and sincerest sympathy.

YES! Well, that is YES SIR! The OHIO STATE JOURNAL OF DENTAL SCIENCE owes the *Southern Dental Journal* for the excellent article by Doctor Wardlaw. A complete oversight; but we are glad that it is among the "Compilations," and hence not claimed as our own. But we should have stated from whence *compiled*, and we thought we had till now.

Societies.

"Wherewith one may edify another."

THE MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS

Will hold its 41st annual meeting, the first Wednesday in March, 1885, in the Ohio College of Dental Surgery, at Cincinnati, O.

PROGRAMME.

1. Progress of Dental Education.
2. Recent Theories concerning Caries of the Teeth.
3. New Remedies for Dental and Oral Diseases.
4. Improvements in Prosthetic Dentistry.
5. New Methods and Materials for Filling.
6. Incidents of Office Practice.

E. G. BETTY,
Ch'm of Executive Committee.

Books and Pamphlets.

ART IN DENTISTRY.—Injurious effects of Vulcanized Rubber, and other things to be thought of by those compelled to wear ARTIFICIAL TEETH. By L. P. HASKELL, Professor of Prosthetic Dentistry in the Chicago College of Dental Surgery.

A very neat little book of twenty-four duodecimo pages; and as it is from Prof. Haskell, of course it is full of good sense. We presume it can be obtained on equitable terms from the AUTHOR.

IRREGULARITIES OF THE HUMAN TEETH, OR DENTAL TERRATOLOGY. Reprint from Illinois' State Society Transactions, and read before that society by John J. R. Patrick, D. D. S., of Belleville, Illinois. Twenty octavo pages full of instruction.

Also, CLOSURE OF THE JAWS and REMOVAL OF A TUMOR. Two essays by the same author, and read before the same society. Good reading—every page.

Our Aftermath.

THE DENTAL COLLEGES AND THEIR EXECUTIVE OFFICERS.

BALTIMORE COLLEGE OF DENTAL SURGERY. R. B. Winder, Dean, 140 Park Avenue, Baltimore, Md.

OHIO COLLEGE OF DENTAL SURGERY. H. A. Smith, Dean, 286 Race Street, Cincinnati, O.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY. C. N. Peirce, Dean, 1415 Walnut Street, Philadelphia, Pa.

PHILADELPHIA DENTAL COLLEGE. J. E. Garretson, Dean, 1537 Chestnut Street, Philadelphia, Pa.

NEW YORK COLLEGE OF DENTISTRY. Frank Abbott, Dean, 22 W. Fortieth Street, New York, N. Y.

MISSOURI DENTAL COLLEGE. H. H. Mudd, Dean, 500 N. Jefferson Avenue, St. Louis, Mo.

BOSTON DENTAL COLLEGE. J. A. Follett, Dean, 219 Shawmut Avenue, Boston, Mass.

HARVARD UNIVERSITY DENTAL DEPARTMENT. Thomas H. Chandler, Dean, Hotel Bristol, Boston, Mass.

DENTAL COLLEGE OF THE UNIVERSITY OF MICHIGAN. J. Taft, Dean, Ann Arbor, Mich.

WESTERN COLLEGE OF DENTAL SURGEONS. C. W. Spalding, Dean, 1525 Oliver Street, St. Louis, Mo.

UNIVERSITY OF PENNSYLVANIA, DENTAL DEPARTMENT, Jas. Truman, Secretary Dental Faculty, 1513 Walnut Street, Philadelphia, Pa.

DENTAL DEPARTMENT OF THE UNIVERSITY OF TENNESSEE. R. Russell, Dean, 53 N. Summer Street, Nashville, Tenn.

- INDIANA DENTAL COLLEGE. Junius E. Cravens, Secretary, 46 East Ohio Street, Indianapolis, Ind.
- DENTAL DEPARTMENT OF VANDERBILT UNIVERSITY. W. H. Morgan, Dean, Nashville, Tenn.
- KANSAS CITY DENTAL COLLEGE. J. D. Patterson, Secretary of the Faculty, 800 Main Street, Kansas City, Mo.
- UNIVERSITY OF CALIFORNIA, DENTAL DEPARTMENT. S. W. Dennis, Dean, 530 Sutter Street, San Francisco, Cal.
- DENTAL DEPARTMENT OF THE UNIVERSITY OF MARYLAND. F. J. S. Gorgas, Dean, 259 N. Eutaw Street, Baltimore, Md.
- STATE UNIVERSITY OF IOWA, DENTAL DEPARTMENT. L. C. Ingersoll, Dean, Keokuk, Iowa.
- CHICAGO COLLEGE OF DENTAL SURGERY. Truman W. Brophy, Secretary, 125 State Street, Chicago, Ill.
- DENTAL DEPARTMENT OF MINNESOTA COLLEGE HOSPITAL. F. A. Dunsmoor, Dean, Minneapolis, Minn.
- ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO. J. Branston Willmott, Secretary, Mechanics' Institute, Toronto, Canada.—*Dental Cosmos*.

HYGIENE.

The Hygiene of the School Room in its Relation to Sight.

At a late meeting of the Société de Biologie (*Gazette Hebdomadaire*, October 17, 1879), Dr. Javal, Director of the Laboratory of Ophthalmology at the Sorbonne, read an interesting paper on this subject and summarized his views in the following conclusions:

1. It is proved that the causes of short-sightedness are habitually a prolonged application of sight during childhood, combined with insufficient light.
2. In our climate illumination by diffused light never attains, even in the open air, to an injurious intensity.
3. The belief that bilateral light is injurious to the preservation of sight does not rest on any theoretical basis.
4. According to most recent statistics there are schools in which the light being bilateral, myopia is comparatively rare, and there exist others in which unilateral light is had under most favorable conditions, nevertheless myopia is as frequent as in the worst arranged schools. Experience is certainly not in favor of unilateral light.
5. Sufficient light by means of windows arranged on one side can only be obtained if the width of the room does not exceed the height of the lintels of the windows above the floor.
6. Light from behind, if it comes from above, may be usefully combined with lateral light; the light from a glazed roof is excellent.
7. Bilateral light should be preferred on all accounts. In this system, the width of the school room being for the same height of windows twice as great as in the case of unilateral light, the intensity of the light in the middle of the room, which is the least benefited portion, is double that obtained by the same distance from windows where unilateral light is used. However,

the width of the school room must never exceed double the height of the windows.

8. Great importance must be attached to placing the school towards the east, and the axis should be directed from north-northeast to south-southwest, a deviation of more than forty degrees from the direction north-south should never be allowed except in exceptional climatic conditions.

9. The master should face the south.

10. Finally it is absolutely indispensable to reserve on every side of the school room a strip of inalienable ground, of which the width should be double the height of the loftiest buildings that could be erected; allowing for the progress of civilization which has multiplied high storied buildings to an extent hitherto unknown in the country. *This last condition is the most important of all.*

THE EXPLORING NEEDLE FOLLY.—The tubular needle furnished with all hypodermic syringes is a far better instrument for exploration than the grooved needle called an exploring needle, and has the additional advantage that it can be used with the syringe attached, which, when so employed, becomes a small aspirating pump. The exploring needle should be discarded from all pocket cases, and substituted by the hypodermic syringe, which is needed also for subcutaneous medication.

DR. JULIUS WISE proposes to publish, during this year, a large volume, under the title "Encyclopedia of Medical Wit, Humor, and Curiosities of Medicine." In this undertaking he respectfully solicits the kindly aid of the profession. Witticisms and anecdotes of a humorous or curious nature are solicited. Physicians, druggists, dentists and others supplying original contributions, will receive due credit in the work. The author is especially anxious to avail himself of every source, and would highly appreciate all information concerning publications likely to be useful for reference. All letters, contributions, clippings, books and other matter, should be addressed to Julius Wise, M.D., 806 Olive Street, St. Louis, Mo.

Let all the funny dentists help him out with their old anecdotes and witticisms. They have had them so long that they ought to be laid away in a place of safety.

ED. JOURNAL.

LORD ROSS, son of the famous astronomer, and owner of the largest telescope in the world, looks about 40 years old, is ruddy, and has more the appearance of a jolly farmer than a stupendous earl.

PROFESSOR HAECKEL, the Darwin of Germany, in studying the embryology of the chicken, has, with his assistants, hatched and dissected 3,000 eggs.

PUSCHER, the Nuremberg chemist, says a paste composed of starch, glycerine and gypsum will maintain its plasticity longer than any other cement.

OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. V.

MARCH 1, 1885.

No. 3.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

PRESIDENT'S ADDRESS.

BY GARRETT NEWKIRK, M.D., CHICAGO.

[Read before the Central Illinois Dental Society, at Pontiac, Illinois, October 14, 1884.]

IT gives me great pleasure to meet with and greet you on this October day, in the pleasant city of Pontiac.

We are in the midst of one of the finest agricultural regions of this wonderfully productive State. The cereal harvest is past and the grain gathered in. O'er all this vast and well nigh limitless prairie the tasseled corn is waving field on field. Nature has been most generous with sun and dew and rain, and now the heavy ears hang thick upon the dying stalks, among the rustling leaves.

I like to look upon the fields. I trust that no association with artificial things will ever cause me to forget to love the soil. It is our mother. It gives to us our food, the trees that shade us, the grass, the flowers, and all that makes our earth a paradise of beauty.

Time was when all men lived in close association with

mother earth. In the simplicity of living, each did nearly everything for himself, or received without labor the free gifts of her hand.

He made his clothing, if clothes he wore, of the skins of the beasts he had slain for food. He builded his own house, if house he had, and added all the decorations.

He had no use for mechanics, artists, poets, authors, editors, publishers, feather renovators, real estate agents, comb manufacturers, street car conductors, lawyers, engineers, telephone messengers, corn doctors, upholsterers, lightning-rod men, plumbers or book agents. Primitive man had no idea of the grand opening for business there was in this world.

The pioneer man worked for himself with very much the same impulse as does the modern, but by different methods. The one labored to get or to produce the things he needed; the other labored to produce something needed by other people, which he exchanges for things he needs that *they* have made.

And this because man has found that he can learn to do some one thing in an excellent manner, whereas he can only bungle in attempting many.

So it has come to pass that the world is in all unconsciousness a mighty partnership in labor, in exchange, in enjoyment and in things to enjoy.

By an endless subdivision of labor it has come to this, that each man's success must depend upon his ability to do some one thing in a very excellent manner.

To know one thing thoroughly, theoretically, practically, with brain and hand, eye, ear and touch; to know it as though it were a part of one's very self, and in all its relations—this is the key to what we call success in life.

That versatility of genius which is able to fly in any direction only to perch upon success is indeed a rare bird.

The demand has been more and more for experts, and the end is not yet, nor will be until the world of mankind shall be but little more than a multitude of experts.

The successful man must be like a grafted tree, content to stand in one place, send his roots into one soil, and bear one kind of fruit.

Neither is this view of life narrowing, as some are inclined to think. The world broadens under it as a whole, while each

branch of business or department of labor becomes in fact a great little world within itself—a world of mysteries not dreamed of by the uninitiated.

Yet notwithstanding this fact, the little worlds are not independent one of the other. They are interlaced by a perfect network of interests and of forces owned in common.

One division of the world's work relates to the preservation of the physical organization of man himself. A proportion of the laborers devote their time and energies to the study of the human body, calling to their aid the study of the bodies of the lower animals.

All the organs in all their co-relations so far as these may be ascertainable, and all relations of bodies of external circumstances or conditions, to mind, to matter, to heredity—all, everything is involved in this study of man, and the proper use of all means for the prevention, treatment and cure of disease, the relief of injuries, the restoration of lost parts and preservation of the integrity of organs.

For centuries—many centuries—this field has been growing wider the more it has been investigated. It has in fact grown from a field into a great territory, subdivided into many fields of special labor and research.

One of these fields is occupied by the dentist. A portion of the body once thought to be worth but a passing glance has grown into consideration till it forms the broad basis of a respectable profession—a field large enough for the free occupancy and the best efforts of the best men. And the end of the sub-division is not yet.

Slowly but surely new departments are developing in what was once but one small sphere. Prosthetic or artificial dentistry certainly occupies a field quite alone, and is almost as far removed from operations on the natural teeth as the manufacture and adjustment of artificial legs, arms, eyes and noses is removed from medicine and surgery.

Artificial dentistry requires peculiar study, peculiar knowledge and peculiar gifts on the part of its followers in order to develop the highest success. The most of dentists who do a little of it, know but little about it, in its highest possibilities as an art. The average dentist is pitied by the expert in this line, because of his woful ignorance.

And this again is liable to division into several fields where there will be room for experts.

On that wide ground which has been called operative dentistry there are natural divisions yet to be more fully recognized than heretofore. There are to be, I think, a few specialists in oral medicine. Men who shall study and treat affections of the oral cavity, other than those of the teeth.

There are to be a number of practitioners of oral surgery pure and simple, who will not operate on the teeth. They will naturally extend their field a little beyond the mouth. If they cultivate this field to the extent of its needs, they will have very little time to develop skill as dentists, neither will they necessarily be known as such.

The prince of oral surgeons to-day is by no means the best standard authority when he speaks on dentistry.

But the department in which the greatest number will find employment will be that relating directly to the teeth—the *natural* and for the most part *living* teeth. Nearly everything they shall do will have a relation to teeth and that which seeks to destroy them.

For the present, too, the ordinary dentist must attend to the regulation of ill placed teeth in children. But I doubt not there will come a time when this branch, particularly that relating to the more advanced and difficult cases, will be somebody's special work, in all our large cities.

The country dentist, like the country physician cannot follow exclusive lines. The M. D. has to be all things—physician, surgeon, obstetrician, gynecologist, sometimes his own druggist, must do something with the eye and ear, possibly extract teeth or give them temporary treatment, be called on for advice in veterinary matters, and may esteem himself lucky if he does not have to curry his own horse.

So the dentist outside city centers, must be about everything relating in any way to the mouth and the teeth. He must be oral physician and surgeon, fill teeth with any and all materials, regulate the children's teeth if they are ever to be regulated, and quite likely depend on an automatic assistant.

But in the very nature of things the highest and best skill in any given field can never be developed in this way, either with the physician or the dentist.

A Valentine Mott, Gross, Flint, Hamilton, Gunn, or a Byford can not be made by a life long series of scattered efforts. These men may have grown *out of* general practice, but have not grown to their later stature *in* it.

So in dentistry, in the broad sense of that term as we have been accustomed to see it used, an oral surgeon like Garretson cannot be developed in the person of any man whose principal attention is given to the unequal fight with caries and the articulation of porcelain and enamel. Neither can any man whose attention is greatly divided ever attain to the excellence of a Cushing, an Allport, or a Haskell, in their special departments.

But such specialists are not found, nor will they be for a long time to come, outside a few large cities.

The main burden of the work must be done by those who can do a number of things, not with the *greatest* excellence, but passably well. If now and then one does develop superiority in one or more lines of work, in spite of the diversified calls upon his time, the fact is all the more to his credit.

For example, the man who does little else than to insert gold fillings comes to operate not only skillfully and quickly, but with ease to himself. Operations which tax the physical powers and vex the mind of the general operator give him little trouble or anxiety.

It has been my purpose for some time to say something in this address about dental education—a question that has recently been discussed from various standpoints, but I may not be able to add anything that is new.

There is really but little difference among intelligent men as to what a dentist ought to know and to be, but there is a divergence of opinion as to what would be the best system—the best course to pursue to reach the end desired.

I shall merely state a few general propositions, and leave details for schools and professors.

I take it that the oral surgeon, the oral physician, and the dental surgeon, if you permit the terms, are all members of that great family of professional men who have to do with the physical well-being of man. They are all members of one body just as the organs they treat are members of one body with the eye, the ear, the heart, the brain.

Paul, in his Epistle to the Corinthians, sets forth this idea to

illustrate the diversity yet unity of the church. And I do not know that it has ever been better stated.

"Now there are diversities of gifts, but the same spirit."

"And there are differences of administrations, but the same Lord."

"And there are diversities of operations, but it is the same God which worketh all in all."

"But all these worketh that one and the self same spirit, dividing to every man severally as he will."

"For as the body is one, and hath many members, and all the members of that one body being many, are one body," &c.

"For the body is not *one* member, but many."

"If the fool shall say, 'Because I am not the hand, I am not of the body,' is it therefore not of the body?"

"And if the ear shall say, 'Because I am not the eye I am not of the body,' is it therefore not of the body?"

"If the whole body were an eye, where were the hearing?"

"And if they were all one member, where were the body?"

"But now are they many members, yet but one body."

"And the eye cannot say to the hand, 'I have no need of thee;' nor again the head to the feet, 'I have no need of you.'"

And in the 25th verse he uses this expression, "For that there should be no schism in the body; but that the members should have the same care *one for another*."

And 26th, "For whether one member suffer, all the members suffer with it; or one member be honored, all the members rejoice with it."

Now, if Paul could so clearly comprehend these truths of physical nature and apply them to the illustration of moral things, how certainly ought we to recognize their force and application in a scientific sense, with the progressive light of eighteen centuries concentrated on our day.

If these things be true of the body of man, they are also true of that scientific body—the body medical and hygienic—whose relations are with man's body. The same harmony that exists in the one, *should* exist in the other, "That there be no schism in the body."

What does it matter that the special attention of one member be directed to the brain, that of another to the organs of the chest, of a third to the mechanical frame—its diseases or

accidents? What does it matter that one is nobly engaged in preserving the integrity and usefulness of the eye, another the ear, and a third the teeth?

Are they not all of the body?

And why should one esteem himself beneath his neighbor, or his neighbor less than he?

Does any man treat stomachs? Are not the teeth the friends of the stomach? Are they not the supporters of the cheeks and the lips and the stays of the jaws?

Are there not telegraph lines between every fiber of tooth pulp and the brain?

And the Apostle closes the chapter with this exhortation: "*But covet earnestly the best gifts.*" An exhortation that professional men everywhere, of all sorts and grades, would do well to heed. Those who earnestly "covet the best gifts," and are laboring, therefore, to secure them, will have no time for petty jealousies and no trouble about the "standing" accorded them by others. A very simple recipe for being respected is—*be respectable*.

What are the best gifts which a dentist should covet? I cannot say that they differ essentially from the best gifts of an oculist, aurist, dermatologist, orthopedic surgeon, obstetrician or gynecologist.

The best gifts are in any case—industry, earnestness, patience, perseverance, tact; and last, but by no means least, *honesty*. The only truly successful man is the *conscientious man*.

All special gifts, I care not what they may be, are subordinate to those enumerated.

And Paul follows up the admonition, "covet earnestly the best gifts," with that wonderful chapter on charity, which I suppose every one present knows by heart.

Touching the subject of dental education, it seems to me it would be well to pay a good deal more attention to conditions antecedent to student life, and some things to follow.

What the young man *has been and what he is when he begins* his dental studies—this will determine in every case what he will be likely to do with his advantages; whether or not he will improve good opportunities or make the best of those not so good.

There used to be a great word among boys when they were trading or comparing knives—the word "stuff." They examined

the blade with a critical eye, held it up in the light to get the shade and grain of the steel, looked closely at the edge, blew upon it, tried one blade upon another to see which would "nick" the most, and all to tell the "stuff."

Now, the principal thing at the start in making a good dentist, or a good anything else, is *stuff*. Most of the failures of any and all systems of education to make a successful showing, dates from the one original failure to apply the jack knife test. (That's a dead open and shut.)

I do not accept the idea that individuals come into the world like blank sheets of paper, on which you can write, with indelible ink, anything you please. You cannot, blindfolded, pick out a boy and make him into what you will. There is a given amount of predetermination in every born infant. Back of every individual there is a long chain of heredity, two parents, four grandparents, eight great grandparents, and, if there have been no consanguineous marriages, sixteen, thirty-two, sixty-four and so on.

Herein we have provision for manifold shades of character. This is nature's arrangement in order that for all places in the world, people may be found adapted to fill them.

So you will find in the same family one predisposed to law, one to medicine, one to business and another to agriculture. One becomes a statesman with all the wisdom of learning and magic of eloquence, while his brother, more happy it may be, treads the furrow. The many streams of the same apparent heredity have come into their veins in varying proportions.

They, too, are members of the family body, but not the same members. They are equally successful if each is in the right place.

But a great many by some means get misplaced—sometimes by the mistaken selections of others and often by their own.

Success has no charity and shows no mercy. Success has no more sympathy than gravitation, and gravitation will dash an infant to the earth as it would a stone. Success acknowledges no master but those who master it by strength. Woe be to that suitor who seeks it in the wrong path, or tries to woo its allegiance with flattery or tears or grievances.

With regard to students of any sort, it is evident that too much care cannot be used in preventing mistakes at the outset.

How is this to be done? There should be some kind of a quarantine against illy-adapted material.

Notwithstanding much late opposition to the old time method, I still believe it good to have the student selected by some man who knows all about him, who will take him into his office long enough for a preliminary course of reading and instruction, long enough to make him acquainted with a dental office, so that he may see what it all means, and to prove in a measure whether or not he and an office are adapted to each other.

The dental schools ought not to receive any but those who come well recommended, and they again should reserve and rigidly enforce the right of elimination.

If you take a measure of potatoes and shake it well, the large ones will come to the top, the small ones will go to the bottom.

Society shakes its members, and professional men must shake with the rest. The progress is going on all the time. Now it would save the professions a good deal of rough shaking and many a bruise if they would do a little more preliminary shaking themselves.

It is better to determine, carefully, the kind and quality of your seed in spring-time than to find yourself disappointed at the harvest.

If all the dental practitioners and college professors would dare to be honest at any cost, if no other motives but those consistent with true zeal for the good of the body and all its members were allowed to govern, we should soon see our standard high advanced.

Attention to these matters will be of greater importance to the future practitioners than the numbers of title letters he may tag to his name.

Now, what shall we require the young man to possess? First of all, character; without this he is nothing. Second, mental ability; he must be something more than mediocre.

But he may have these and still not be adapted to the work. He must have *more*; he must have some preliminary education. First English—I will not say how much—but he must give evidence of thoroughness in what he has. If he has not shown himself able to *master something* he will never win success.

But he may have character, general ability and education,

and may have mastered one or more things, and still be not adapted to the office of dentist. All these he *must* have, but also more. He must have a taste for the work, a love for it which will grow the more he is in it, an ambition for excellence, mechanical skill, and the eye and touch of an artist.

A *surgeon* needs much more than mechanical skill, but mechanical skill *he must have* or he is no surgeon.

A *dentist* needs far more than mechanical skill and the artistic sense, but *these he must have* or be a poor kind of dentist. I should care but little where a boy's early lot had been cast. If he has passed some years at some good hard work, he is none the worse for that. Muscle and nerve and physical discipline are as valuable to a dentist as anybody. A practical acquaintance with tools, a knowledge of mechanical forces and the properties of metals are of more practical value than Greek roots or Egyptology.

With regard to the early training of successful men, the Almighty seems to have had but little regard in times past for the rules of the schools.

I suppose if it had been told the schoolmen of seventy years ago, that in the year of our Lord 1860, a great emergency would be present with the American people, and to prepare a leader from among the children of the day, they would have done something like this: The wise men would have searched for some Hannah with a promising Samuel; they would have said, "he must be one of beauty and comeliness; he must come of the good stock of one of the first families of the land; he must be educated with great care; he must have the best tutors the land affords; his conduct must be governed by the strictest rules and regulations; he shall move only in the very best society; the tone of his character shall not be lowered by common associations. Let us show the world what the best training will develop."

But the Almighty found a poor boy in an old log cabin among the white-oak hills of Kentucky. His feet were bare and his garments homespun. His books were few and he scarcely knew a school. He carried eggs to market till his hands were old enough to wield the tools of the pioneer backwoodsman. Under hard, rough fare, his shoulders grew broad and strong, fitted to bear great burdens. He sat by the firesides of the humble and lived their life till his sympathies were close with all mankind.

His life was one great conflict with the adverse forces of men and nature.

He was taught to depend not so much on the knowledge of a multitude of things, but rather in the great power and value of a few fundamental truths, and so, when the time came and the great conflict impended, the *man* was ready. The heavy hand of the pioneer axman was strong enough to write and sign one of the most important political documents ever penned by man.

But let us not forget the fact that this boy, though obscure, had behind him a magnificent heredity of physical, mental and moral qualities. He was the vigorous branch of a strong ancestral tree.

I have used this example with a view to emphasize these truths, namely,—that there must be a good foundation in inherited constitution—there must be “*stuff*” to begin with. That the essentials of education consist largely in those things which go to make character—things which develop habits of industry, self reliance, perseverance, judgment, and not the least, honesty.

If your students have all these, the battle is predetermined in his favor. Whatever the advantages or disadvantages of his surroundings, success will be but a question of time. You may give this dental education principally in an office, or a college, he may get much of his knowledge from books or more from lectures, but *knowledge* he will *get*, and he will *work to success*. You may give him three degrees, or two, or one, or none, but unless you bar him from the field you cannot make him a failure.

It had been my intention to say more on special methods in the work of dental *education proper*, but I have already consumed more time than I ought, there are others present rich with the wisdom of years and experience in that field, and I leave the development to them.

There is much to be said, too, on the further education of the dental practitioner, the influence of societies, and periodical literature, but this also I leave with you.

May our meeting continue and close with the same spirit of harmony and good feeling which has characterized the opening, and may the Central Illinois Dental Society as a society, and its members as members, and “all your families,” in the words of Rip Van Winkle, “*live long and prosper.*”

THE MORAL OBLIGATIONS OF DENTISTS.

BY W. A. JOHNSTON, M.D., PEORIA.

[Read before the Central Illinois Dental Society.]

"WE are debtors, both to the Greeks, and to the Barbarians; both to the wise, and to the unwise."

We owe something to ourselves, to our professional brethren, to our patients, and to the community in which we live.

It may seem presumptuous in the youngest member of this society, to discuss such a subject as I have chosen; but remember, please, that if I have not been in practice for thirty or more years, I have been spared so many years for which to repent in sackcloth and ashes, for sins of omission and of commission.

I look forward, therefore, rather than backward.

Our duty to ourselves, demands that we make an honorable and comfortable living. We must live, and we are under moral obligations, not only to live well, but also to live happily.

We owe it to ourselves, therefore, to make the most of our opportunities, for study, for work, and for recreation.

Re-creation—that is the word.

If we wish to succeed, we must not worry ourselves about our patients or the lack of them; about our business complications or family affairs.

"Why all this fuss and flurry,
Dost thou not know that what is best,
In this too restless world, is rest
From over-work and worry?"

Not one dentist in twenty, takes enough rest. In the struggle after the almighty dollar, we are apt to neglect our bodies entirely, and, as a consequence, suffer the penalty of nature's broken laws.

You all remember the fable of the stag, who saw his reflection in a stream. He admired his noble antlers and fine head, but felt sorry that his legs were so slim and weak.

Soon, however, he heard the baying of hounds in the distance, and his despised limbs were bearing him away in safety, when the horns of which he was so proud, caught in a low tree and held him prisoner, so that he was slain.

Let us take warning, and never despise nor abuse any of our members.

Too long office hours, too intense mental and physical effort, with too few holidays, are clear violations of our moral contract with ourselves.

An occasional afternoon's hunting or fishing or an hour in the saddle after supper, will make a vast difference in the readiness with which we do our work, and the satisfaction we derive from it.

To those engaged in the same calling, we are under peculiar obligations.

In no other profession is there so much jealousy, as in ours.

One reason for this is, that the demand for services, cannot be increased.

There will be just so much dental work to be done in a community, and the greater the number of dentists, the less will each have to do.

Therefore each dentist becomes an Ishmaelite; "his hand is against every man and every man's hand is against him."

My friends, "these things ought not so to be." Competition when fair and upright, is necessary and honorable; but hateful remarks, unjust criticism or disparaging statements about our professional brethren are, to say the least, unworthy of gentlemen. All this can be easily avoided.

"Make your conversation refer strictly to the present and future, and not to the past, and do not mention your predecessor at all, unless you can speak clearly to his advantage.

"Courtesy, truth, and justice, should mark every step of your career.

"Enhance your profession in public esteem at every opportunity, and defend your brethren and profession too, when either is unjustly assailed.

"Indeed, to fail to defend the reputation of an absent professional brother, when justice demands it, is ignoble, unprofessional and implies a quasi-sanction of the libel."

The younger men should look up to, and reverence, the older, and should never forget that while they, the younger, have had a better education to begin with, yet the older men have a fund of experience which is invaluable, while their skill is rendered more perfect by practice, year by year.

There is one privilege which ought not to be undervalued, and, were we true to ourselves and our patients, we would oftener avail ourselves of it.

This is consultation.

How many cases there are, in which an exchange of views would be advantageous to all parties concerned.

Yet a consultation is not sought by the *young* dentist, because it will be considered a virtual confession of weakness, inefficiency, or lack of confidence, by the older practitioner, who may regard him with some contempt in consequence. The more experienced dentist does not dream of asking a young man to see a case with him, as it implies that he himself is not infallible.

Is it not the duty of the older members of the profession, to encourage the younger, by their assistance, advice, and patronage, and will not such a course pay in the end?

Not until we can grasp the idea that we have duties to others as well as to ourselves, will there be any hope of our being of much service, in this "vale of tears."

By the very fact of coming to us, our patients lay us under obligations to honor their confidence by doing our *best* for them.

We must not forget that we are their servants. They employ us and pay us for our service.

Justice demands that we work for them, and not for ourselves.

The supreme desire of the dentist should be to subserve his patient's best interests.

An instance may be given of a young man, who before leaving home for college, called upon a dentist to have two cement fillings removed. The fillings had been inserted in Berlin about a year previously and were in perfect order; but the gentleman having been told that they might not last more than a year, fully expected to have them replaced with gold. Here was an opportunity to earn a round fee, but the young man was not in need of dental services, and was so advised.

In doing our best for a patient, we may become involved in a long and difficult operation, or one which is in itself distasteful, or may even meet pecuniary loss, yet if it is a *duty*, that is reason enough for its performance.

Let me emphasize this strongly. We are often tempted to extract a tooth which looks forbidding and is difficult of access;

yet if this tooth is removed, its antagonist will become useless, the cheek will fall in noticeably and so much masticating surface will be lost. All this, because we were too lazy to do our best for the patient.

In these cases the patient's knowledge is limited, he would gladly be enlightened, and would appreciate our endeavors to serve and instruct him.

As a rule patients place but little value upon the posterior teeth.

It is our duty to save the back teeth for masticatory purposes and explain that the health depends largely upon the condition of the "grinders."

It has been urged against the German Universities, that the professors look upon their hospital patients, simply as so many diseased specimens, upon which to study pathology, and that so long as their favorite study is supplied with material, they care very little for the welfare of the unfortunates.

This is true, unhappily, of many dentists, with the wording slightly changed. How many there are—none here of course—whose first, last, and only aim, is to make money!

Every patient who comes to them is regarded simply as the owner of a purse; the operations performed, and the instructions given, are all tinctured with this idea.

This is not right, and we should not only oppose this wrong in others, but also be careful that we ourselves are free from blame. If we are practicing dentistry, just to make money, we are not wise. Dentists seldom become rich. With an income of \$15 per day for thirty years, the total amount earned is only \$154,250, and when office and household expenses are taken out of this sum, there is precious little left. As in many other cases, however, virtue has its reward even in dentistry.

A case will illustrate: A coarse-looking German woman applied to a dentist to have a "toodt oudt." The tooth was a valuable one, and instead of extracting it, the dentist spent half an hour, and his entire stock of German, in explaining the operation of removing the pulp and filling the tooth. The woman had no idea that such things were possible, and the result was, that instead of receiving fifty cents for extracting, the bill for putting her mouth in good order amounted to over sixty dollars, which was cheerfully paid. Not only so, but her attention having been

directed to this subject, she sent her twelve children to the dentist, and since that time, has contributed largely to the support of the man who refused to extract a useful tooth.

Our duties to the community in which we live, are such as belong to mankind in general. with this added, that because of our title, we are looked up to in social, moral and hygienic matters. Let us be careful to sustain our reputations, by being clean, morally and physically, and let us carefully fulfill every trust committed to us.

Let us be kind, sympathetic, courteous, gentlemanly, honest, with a "conscience void of offence toward God and toward man." Then, if we have not performed our whole duty, we have done our best—"Angels could do no more."

"What shall I do, lest life in silence pass?"

"Thy duty ever.—And if you do,

And never tempt the bray of noisy brass,

What need'st thou rue?

Remember, aye the ocean deeps are mute,

The shallows roar,

Worth is the ocean—fame is but its bruit

Along the shore."

DISCUSSION OF DR. JOHNSTON'S PAPER.

DR. NOYES: I wish to speak upon the subject of jealousy among dentists. My experience is that there is more jealousy among physicians than among dentists, which is to be accounted for by the crowded condition of the medical profession—when to gain even a subsistence requires cheap living and sharp competition. No one gains the good opinion of a patient by speaking ill of a brother dentist. The first duty of a dentist is to see that his patient receives the best care from his own hands and deliverance from quacks.

DR. MOODY: The last remark of Dr. Noyes suggests that we country dentists are differently situated. Frequently we have only one competitor, and to say he may be a quack, or do inferior operations, leaves the impression in the minds of our patients of being jealous or unfair in our treatment of a professional brother. In my own experience, by treating a dentist fairly whom I knew did very inferior operations, I was repaid by the same man

refusing to take a patient from me when solicited to do so, he told the patient to return to me ; that I was doing all that could be done.

DR. MORRISON : I have been at a loss to know what to do or say to patients, upon seeing the imperfect operations of others.

DR. DAVIS : Tell the truth ! which I should do if it was my brother who had done the operation. In taking a student, the dentists are under a moral obligation to see that the best material is taken. I have known of one case where a dentist had promised to teach a student all he should know in four months for \$100.

DR. MOODY : I would like to ask the question, where should a student commence study, in a private office or at college ?

DR. CUSHING : My opinion is a student would better go direct to a college, unless he is unusually fortunate in getting under the best private instruction.

DR. TAYLOR : Patients insist on having teeth extracted. I'm afraid I often yield to their requests, when I ought not to do so. A young lady came to have a tooth extracted, I refused because the tooth could be saved. She left the office, went directly to another dentist and he extracted the tooth. We should do what is for the patient's best interest even if they do not appreciate it. We should speak well of our professional brethren when we can do so truthfully. As a rule we do not always do so.

DR. PRUYNE : I agree with Dr. Davis that we should always tell the truth, but there are various ways of doing it. A case occurred in the first year of my practice. A patient left me and went to Dr. Cushing, who found the work had to some extent failed, and although Dr. Cushing told the truth, he told it in such a way that he gained the patient's confidence and at the same time did not destroy the patient's confidence in me.

DR. MCINTOSH had never seen such courtesy among dentists. A dentist, years ago, told me that one of the fillings in my mouth was a failure, when in fact, it is good yet. Would not send a patient back to a quack, but would try and help a brother dentist.

DR. BROPHY : I like the paper,—it is one of the best I have ever heard on the subject. While Dr. Johnston is a very young man, he has certainly demonstrated that he is capable of writing papers that rank with the very best. While I was a student of medicine I was obliged to send my patients to other dentists and was most courteously treated by them. They invariably did

what was necessary to be done, at the time, and advised them to go back to me, when they needed anything more. It has been said that the mistakes of the lawyer are suspended six feet above the ground, and those of the physician buried six feet under the ground, while the mistakes of the dentist are continually staring him in the face. I think the way Dr. Cushing treated Dr. Pruyn is the correct one. Students do better to go to college at first instead of studying in an office and having much to unlearn. Would not extract teeth for any patient where they ought not to be, consider it malpractice to do so.

A man desired a surgical operation, which was refused by the surgeon. The patient went away, but afterwards returned stating that another physician had consented to perform the operation and unless he, No. 1, would operate he should go back to surgeon No. 2. The operation was performed, and the surgeon was afterwards sued for ten thousand dollars damages, a portion of which was collected.

A young lady sent to me by a physician with instructions to extract her teeth. I refused as it was entirely unnecessary. We find jealousy in all professions and callings. Go straight ahead and pay no attention to jealousy.

A patient came to a surgical clinic at the Rush Medical College to obtain Dr. Gunn's opinion of an operation which had been performed by another surgeon,—simply to get his *opinion* about what had been done. Dr. Gunn put him out of the room at once, stating that it was not his place to criticise other surgeons.

DR. CUSHING: Dental associations will do more than anything else to encourage a friendly feeling.

DR. SWAIN: I endorse what Dr. Cushing has just said. The benefits of these societies are beyond computation.

DR. NOYES: What has been said here upon this subject, has advanced more ideas in this direction than I thought of in the first five years of my practice.

DR. NEWKIRK: Two proverbs come to mind. The golden rule, "Whatsoever ye would that men should do unto you, do ye even so to them. Whatsoever ye mete to others, shall be meted to you again." The kind of spirit which we cultivate, makes us what we are. If we could carry out these two rules in practice, and persist in repeated kindnesses, we would be bene-

edited. It will, in course of time, react: we will be respected and loved, as Dr. Cushing is by all the dentists in Chicago. Have been associated with medical men, both in societies and in practice, and think the dental profession compares favorably in this respect. The worst case of jealousy I ever saw, was in a Presbytery, among clergymen. There is but little difference in the professions in this respect. The lawyers have jealousies, but can cover them up.

DR. CUSHING: I want to say in answer to Dr. Morrison's question—that it is not our business to answer questions (unless before a court) as to the operations of another operator. Our business is to say what needs to be done, and to do it. The public have no right to ask our opinion of operations they may have had performed and we certainly have no business to answer such inquiries.

DR. MORRISON: There is one thing I cannot agree to—that there is more jealousy and dishonor among dentists than among other callings. All I am as a dentist I owe to such men as I see around me, for I have received so much good advice and kindness, my mistakes so kindly criticised, that my opinion of my professional brethren is quite different from that held by Dr. McIntosh.

DR. MCINTOSH: I wish to say that the gentlemen I spoke of do not belong to such societies as this.

THE POISONOUS EFFECTS OF AMALGAM FILLINGS.

BY DR. E. S. TALBOT, CHICAGO.

[Read before the Central Illinois Dental Society.]

IN presenting this subject for your consideration, it is with the intention of provoking a general and free discussion. To advocate the abolition of amalgam fillings would be folly. There are few dentists who are not called upon occasionally to insert these fillings, and those who exclude them entirely, do it to the disadvantage of their patients. Thirty years ago, the better practitioners discountenanced their use, as they considered them likely to supplant the gold filling; to an extent not to be desired, and they also presented a dark appearance in the tooth. An

amalgam consists of two or more metals, one of which must be mercury. The first amalgams were made by filing silver coins and mixing the filings with mercury, since that time, manufacturers have changed the metals to suit their ideas, or to claim an original composition. Gold, platinum, silver, tin, copper, cadmium, zinc, and others have been employed.

After the cavity is prepared, the filings are rubbed up with sufficient mercury to thoroughly incorporate them, and the surplus mercury squeezed out. The amalgam thus prepared is packed in small pieces into the cavity, which has been previously dried. Chemists are divided in their opinion as regards the change which takes place at the time of the hardening process, whether it is mechanical or chemical, if chemical, the bond of union is so slight, that one of the principal factors is liberated at ordinary temperatures. When the hardening process takes place, there is a re-arrangement of molecules, and if the packing is not complete before this re-arrangement, the filling is practically of no account. This is particularly noticeable in the application of the Bonwill and How crowns, and render such operations very uncertain. The amalgam does not preserve a tooth, as the gold filling does. The gold which is packed against the walls of the cavity, is not permeable to fluids, so the surface of the cavity is preserved from the contact. The amalgam filling contracts by the evaporation of mercury, and moisture not only enters between the tooth substance and the filling, but permeates the filling in proportion as the particles crystalize coarse or fine, before the hardening process is complete. This is observable to the naked eye, and was proven in my experiments on this subject. By weighing the filling as soon as prepared, and again after a lapse of three months, the filling was found to have increased by the absorption of moisture. You know that frequently where shrinkage has occurred, the continuity of tooth structure has remained intact. This is the result of a chemical change between the sulphur of the body and the tin in the filling, producing sulphide of tin. This has a therapeutic effect upon the tooth structure.

Dr. Austin, of this city, lines the cavity with tin foil previous to packing the amalgam. He claims that the surplus mercury will take up the tin, and in case of shrinkage or otherwise, the cavity is preserved by the therapeutic effect of the tin which comes in contact with the tooth structure.

A New York dentist accounts for the bulging of the amalgam filling by the tendency of the mercury to resume its globular form, carrying the alloy with it. This theory is questionable, as the resistance of the alloy would be greater than the force of the mercury. If this were a fact, the filling would take a globular shape, instead of assuming the shape of the cavity. Haswell, who is recognized as authority by the United States engineers, states that amalgams expand. If this is true, it is another proof that shrinkage is caused by the evaporation of mercury.

Of the many explanations for the peculiar symptoms of mercurial poisoning, the common theory that the chlorides unite with the mercury, producing chloride of mercury, seems to me unreasonable. The mercury being neutral, and there being other substances in the mouth which have a greater affinity for the chlorides, we naturally ask how the symptoms observed in persons who have amalgam fillings are caused. To satisfy myself as to the real cause, I instituted experiments chemically, and upon animal and vegetable life, the result of which, was published in Transactions of the Illinois State Dental Society. These experiments covered a period of two years, and proved conclusively to me, that evaporation from amalgam fillings is going on at all times at ordinary temperatures.

These experiments have been repeated by others with similar results. It was proven that the quantity of vapor produced, depended upon the surface exposed. A sensitive person might have a small filling inserted without poisonous symptoms, and yet would respond to the effect of many. Manufacturers have competed in the attempt to make an amalgam which would not discolor in the mouth. These are harmful for two reasons. The bright surface facilitates the evaporation of mercury and tin, the important factor for the preservation of the tooth is wanting. Those amalgams which best preserve the teeth, are the darkest. Mercurial poisoning manifests itself variously—sometimes immediately upon inserting the filling, and again not for years. The symptoms are very marked in the first case. They are characterized by a metallic taste and a peculiar sensation, not unlike the sensation experienced upon holding both poles of a battery. If the tooth contains other fillings, particularly when in close proximity or by contact with plated silver in eating, the shock is felt. Some foods brought in contact with the filling will produce the same result.

Dr. Elihu Pettit, of Philadelphia, mentions a case in his practice, where a patient after having a large amalgam filling inserted, partook of raw oysters, which brought in contact with the filling, produced a shock, and the pain following was so intense, that the filling had to be removed. Sometimes an amalgam filling will give such a shock to the dental nerves as to produce the most excruciating pain. Such a case came under my care. The contact of gold and amalgam will give pain or a shock. I have observed that the gold filling in the crown of a molar coming in contact with an amalgam in the molar of the opposite jaw will produce a peculiarly disagreeable sensation. The most common pathological condition as a result of mercurial poisoning is *ptyalism*.

The normal flow of saliva in twenty-four hours is about three pounds. When the flow exceeds this amount, we have an abnormal condition. I have noticed among my patients that those having several amalgam or a number of gold and amalgam fillings, are afflicted almost invariably with ptyalism, and where operations are made or even on the application of the rubber dam, the glands excrete quantities of saliva, as no inflammation or pain attend this condition, the patient is not aware of its existence, and unless the operator be observing, these cases may pass notice. Metallic mercury when taken internally or rubbed into the skin will produce rheumatic pains. Dr. Hughes, twenty-four years old and a graduate of the Ohio College of Dental Surgery, says he has been practicing dentistry for four years, since which time he has suffered with a dull pain extending from the shoulder to the ends of the fingers at times, but usually to the elbow. He was never troubled with this pain until he commenced practicing dentistry. Recently in an absence of a week from his office with a surveying party, he felt no unpleasantness from his arm, but with the first amalgam that he made upon his return, the same dull pain was experienced in his left arm, as he was in the habit of rubbing it up in the palm of his left hand.

Dr. R. Wood Brown mentions the case of a Wisconsin dentist with whom he was acquainted who was incapacitated for work on account of the swelling, pain, and partial paralysis caused by habitually mixing amalgams in the palm of his left hand. I have had a similar experience in the mixing of amalgams in the palm of my left hand. I frequently suffer from a dull pain extending

from the fingers to the shoulder. In making some experiments I worked up the mercury in tin with the thumb and forefinger of my right hand, occupying about ten minutes. I immediately experienced a dull pain in the finger and wrists.

A lady visiting in Chicago was recommended to me by her dentist, to fill a tooth which he had been treating but hadn't time to finish. Upon examination I found nearly all of the teeth filled with amalgam. I inquired about her health, and although but 18 years old, she told me she was getting old. She had suffered with rheumatism and paralysis agitans for three years. Naturally her health was the best, but since the amalgam fillings had been inserted from three to five years previous. She had been constantly in poor health. I suggested that she have gold fillings substituted upon her return. Mercurial poisoning from amalgam fillings is likely to manifest itself, particularly in persons having lesions in remote parts of the body. Mrs. S. 46 years of age was experiencing the ills common to women at her time of life and came to my office in 1880. She was salivated and had a disagreeable taste in her mouth, together with numbness in branches of the facial nerves on the left side. I removed amalgam fillings from the second and third molars upon the lower jaw. The above symptoms gradually disappeared and in six months she was well. Miss A. a school teacher and patient of mine became greatly reduced from overwork and from chronic bronchitis. She complained of symptoms usual in mercurial poisoning. I substituted gold fillings for the amalgams, and these symptoms gradually disappeared. Mrs. W. also a patient, was suffering from laceration of the *cervix uteri*. She manifested symptoms common in mercurial poisoning and upon the removal of amalgams she was relieved. Many persons, not well to do pecuniarily, fill positions which demand a cleanly and good appearance and though desirous of keeping their teeth properly have no means to pay for gold fillings, the result is amalgams are put in the teeth of many who get little pure air, are poorly nourished and should have the best fillings inserted. The profession and the public will welcome a filling which shall take the place of amalgams.

DISCUSSION OF DR. TALBOT'S PAPER.

DR. PRUYNE: If the reports of the poisonous effects of

amalgam fillings be true, many of us are doing our patients a great deal of injury. I think the cases given have been exaggerated. Let us have a description of the symptoms from this mercurial poisoning.

DR. TALBOT: The symptoms of mercurial poisoning are ptyalism, redness of the gums, spongy gums, etc.

DR. MOODY: We sometimes go to extremes in these matters.

DR. SHERWOOD: Have used amalgam for six years. There are cases in which it may be used, but am satisfied there are cases of poisoning from its use. Have myself salivated one patient from it.

DR. TOWNSEND: Have no more doubts about the poisonous effects of amalgam fillings than I have of my own existence. Filled a mesial cavity in an upper molar for a farmer in good health. Notwithstanding the cavity was prepared, filled and the filling finished with the rubber dam on, the amalgam used as dry as it could be packed, and all the mercury that could possibly be brought to the surface, absorbed with tin foil, the patient was badly salivated. He had taken no medicine, yet he had all the symptoms of mercurial poisoning. Another case, that of a lady who had been so badly salivated from amalgam fillings inserted by her dentist, that periostitis was produced, resulting in necrosis of quite a portion of the outer alveolar plate. Still another case was that of a lady whose teeth were filled with amalgam some 18 years ago, and all went on well for a time, but for some years her health had been failing, the stomach appearing to be the seat of the trouble, which medicine failed to relieve. Her physician insisted that the amalgam fillings were the cause of the trouble, and must be removed. This was done and the cavities refilled with gold. The improvement was very marked, the gastric trouble entirely disappeared, her system is well nourished and her health perfectly restored without any medicine whatever. These were, of course, exceptional and extreme cases, yet I believe the cases of amalgam poisoning are much more frequent than most of us suppose. Have no doubt but there are many invalids that suffer for years, receiving no benefit from medical treatment, their health entirely ruined and the cause of the trouble never suspected. Gold will preserve the teeth more uniformly than any other filling material we have, and is in the end, the cheapest for

the patient, and as we can seldom or never know the susceptibilities of our patients, amalgam should be used as little as possible.

DR. NEWKIRK: There may be cases of amalgam poisoning, but I have my doubts. Possibly the symptoms are due to other causes.

DR. BROPHY: There is no doubt that there are some cases of poisoning by amalgam fillings, but it is patients who are susceptible. We should be careful in experiments and diagnosis. Iodide of potassium is the best antidote to mercury, yet will salivate. [Mentioned case of a patient poisoned by a piece of lead lodged between his teeth.] Nearly every one takes mercury in large or small doses, but it is the small doses retained in the system that does the harm.

DR. NEWKIRK: Now, I'm not going to say that amalgam fillings will not produce mercurial poisoning, but like the Scotchman, "I ha' my *doots*" about it. I had a long correspondence with prominent practitioners of medicine, on this subject, at one time, and every one wrote, that they never saw such a case.

CAUSES OF FAILURE IN DENTAL OPERATIONS.

BY DR. F. H. MC INTOSH, BLOOMINGTON.

[Read before the Central Illinois Dental Society.]

FAILURE to the ambitious soul is something which cannot be easily soothed. A consciousness of having failed in that which you expected to succeed in, the fact your labor had been for naught, the complaint of the party suffering the loss, all bear upon the one that is looked to as the author of the failure to make him lose heart, bring him from the happy plane where success places one, and we find him floundering in the "slough of despond" deciding he himself is the one wholly at fault for the misery. Look back over your professional experience and you can easily remember how discouraged you have been, how you have censured yourself and declared perhaps you had missed your calling and the like, and in every case you decided thusly, it was from a mechanical standpoint, that you didn't quite get undercut enough, or there was a lack of condensing the gold at the cervical margin. Those days are past, though many failures

come from defective manipulation, still, we must look further than to think it lies wholly within ourselves in one sense, whether our operations stand or fall.

I shall speak of a few of the causes of failure, as they seem to me in dental operations. The greatest, or one of the greatest is the using of gold as a filling material to the exclusion or nearly so of any other. No matter how many times a tooth has to be refilled, gold is the only substance to do it with, even though the tooth coming to you for the plug left your hand one, two, or three years previous. The age of the patient making no difference, temperament not being once thought of. A lady came to me with an inferior wisdom tooth which had lost its filling. It had been filled with amalgam by one of the best gold workers in this state, under protest—he advising that it was hardly worth filling with gold, and recommended extraction, rather than fill it with amalgam. There was plenty of room for the tooth, and no reason why it should not be retained as a useful organ, but for the reason gold could not be used, it was to be yielded up to the forceps. To have taken out that tooth would have been more of a failure than to have filled it under the gum with gold and shortly have had to repair it. Yes, ten times more. A dentist has no more right to follow on in a certain line of practice and use just what his “departure” calls for, than a physician to ignore any remedy outside his “pathy” that will subserve to his patient’s good. To satisfy this patient, this operator placed in the amalgam—it came out in a year or little longer. To make a success one’s heart must be in whatever he does, and this operator’s was not, for I know him to take much pride in the fact he is not an amalgam worker, he did not prepare the cavity, or fill it with that same care he did others with gold, in the same mouth, that were doing excellent service. That same tooth will serve the patient for years, and I am glad I placed in an amalgam plug with care and a belief that it was good for the case, and the thanks I received at the sitting, and the satisfaction the patient has expressed since, that she has her tooth a useful, comfort giving member, is more to me and many times greater than was said of him who worked many weary hours in different parts of the mouth with the gold. I am not discussing gold, but to the operator who uses this material where many times gutta percha or amalgam should be—this to him, is a cause for his failure for the

above mentioned materials, will save teeth when gold can not. In connection with the use of gold and amalgam, thermal changes are to be considered. The discomfort which arises from metal being placed too near a pulp, need not be described. The patient has no peace, cold things at first give severe shocks and they, thinking "air is getting in under the filling" as they express it, return to see what is to be done. You say, bless your heart, I have had in fillings which have given me good service for ten years, and I cannot bear cold water upon them; by warming them with the tongue or cheek, it soon passes away—give yourself no alarm, it will lessen and finally disappear in your case, I think. The patient goes out, and do you thoughtfully consider of what temperament she is? Did you recognize what temperament she was when you gave her the sitting? Cold and hot things keep this patient miserable, and the result is, you have a devitalized tooth. This is a very important matter, this intermediate filling—but no one knows when to use it, without a knowledge of temperaments. We should know at a glance where to place our patients in the order of temperaments and the line of treatment to pursue, as well as to know what shape, size and color of artificial tooth to select, by the color of the hair and eyes, when a denture is to be constructed. You have been surprised many times when complaints have been made because of trouble from thermal changes, and have said, I do not understand why Mrs. W. should have trouble when Mrs. C. is perfectly comfortable with a tooth decayed far worse. You decide one is an irritable and not easily satisfied patient, when the whole trouble lay in your not recognizing that one was of a *nervo-lymphatic* temperament, and the other *nervo-sanguine*, or better, *bilio-sanguine*.

Modification of treatment is absolutely necessary now, and will become more so, when temperaments become more complex and they will, as generations come and go. Temperaments can not be known intuitively. With the basis *bilious*, *sanguine*, *lymphatic*, and *nervous*, the binary combinations can be obtained by knowing the characteristics. Much hard study must be put forth in this direction, before we may expect to have fewer devitalized teeth from pulps dying under fillings. All failures in dental operations are not to be laid at our door. I am becoming more and more satisfied, as I practice, that when new decay shows itself around a filling in a tooth I have patched—for a tooth filled is but

a repair job—that I must look further than my best efforts, and the material used to restore what had been wasted, and find out whether vigilance had been keeping watch over the labor of my hands, before passing judgment upon myself. You make a great mistake when you warrant work, a warrant is one bar down through which the accredited failure creeps, and you must stand in the breach, because of your word having gone out to make good what many times you ought not to do without fee. A lack of care on the part of the patient of what you have committed to their charge, is a cause for your seeming failure, which you should recognize and avert. Feel that it is not for you to make any operation good, unless it be the fault of the mechanical shaping of the cavity, or the scaling off of the gold. I never try to make a patient believe I am greater than my Maker, or that He has endowed me with skill to place an indestructable material against a destructable one, in such a manner that it will remain intact. Make a patient feel that because a tooth is filled, is no sign it will not decay again, and that it certainly will, if it is placed under the same circumstances it was before it received its plug. Do away with false modesty that prevents you from alarming patients if need be, at the care they are taking of their mouths, talk to them plainly in regard to it, and make them feel that if they have the filling, they must take the risk, and come back again to what many term first principles, the proper cleaning of the teeth, the removing of the stains and tartar. Do not turn over this very important operation to your student. If I were to have a hundred students, they should not be set at that work as the first and of the least importance, in the profession they wish to acquire. Removing tartar properly, keeping bundles of quill tooth picks to give your patients, showing them how to use and sharpen, looking at the condition of the saliva, and correcting the acidity, by having them use a good tooth powder, keeping a good stock of brushes, and selecting yourself the stiffness of the bristles the gums require, showing how to brush to the best advantage, and impress that thorough brushing is not the using of five minutes of time scrubbing the teeth, we will all of us see a marked improvement in the mouths of our patients, will have less annoyance from sensitive dentine, and my word for it, less to do in the way of re-filling.

One thing more, be selective in your filling material; be as the physician who was asked if he was an alopah, he said no;

you are a homœopath then, no, what are you? I'm doctor, he replied. So with us, not gold workers entirely, not any one thing, where our patients have all grades of teeth, and where we cannot discard any material to advantage. Fill with that material that will extend your beneficence to the greatest number of suffering human beings, and will be to your credit, and that that will draw upon your nerve force the least, thus you will have a longer hold on life, be of more use in the world, and look back over a practice with an added ten mile stone, and at each mile will be read; This man was truly a conservator of teeth.

DISCUSSION OF DR. MCINTOSH'S PAPER.

DR. TOWNSEND: Am much pleased with the paper, but of course, no one paper could enumerate *all* the causes of failure in dental operations. Their name is *legion*. Think one cause of failure is laying cohesive gold out over the cervical margin or over a wall in building out, and condensing down upon the wall, expecting to make a water-tight joint. Would either commence proximal fillings with non-cohesive gold, or else start as far in the cavity as possible and work back towards cervical wall, expanding the gold laterally by the condensing process, and in this way it cannot spring up away from the walls. Thought failures occurred where a considerable portion of a tooth was built up, by condensing laterally with too heavy mallet pressure, the leverage and force tending to loosen the filling and cause leakage. Agrees with the essayist that the same causes which produced decay in the first place, may cause it again, and this is especially the case in labial and buccal cavities, and also in proximal cavities, if we allow the lateral walls to remain in contact, but in molars and bicuspid, these can be cut back until the enamel cannot come in contact, and food remaining between the teeth is in contact with the gold and not the enamel. The lateral walls are in plain sight on either side, they can be easily examined, the brush can cleanse the filling. If the work is carefully done, the proximal surface of the filling left convex, and the point of contact small, there is comparatively little danger of a recurrence of decay. Cavities in the grinding surfaces of molars and bicuspid, unless chemically or mechanically abraded, are caused by fissures or other

imperfections in the enamel, and when properly filled, are not likely to decay again. The fissures must of course be well followed, and little or no overhanging walls of enamel left. Here, as in proximal cavities, there is danger of not cutting away enough. Is naturally rather timid, and it has been a fault of his—not cutting away enough.

DR. CUSHING: That is a fault with all of us.

DR. TOWNSEND: Have filled proximal cavities in molars and bicuspsids one side cutting away all the apparently unsound tooth, and yet left the lateral walls in contact. In the corresponding teeth on the other side of the mouth, cut the lateral walls well back, and have usually found in the former, that the enamel would soften in three to five years, while in the latter, there is usually no recurrence of decay if the work is thoroughly done, excepting in those cases where there is a general softening and breaking down of the enamel of all or nearly all of the teeth.

DR. J. D. MOODY: If I notice something in the cavity that calls for the use of the zinc phosphates, use as a temporary filling this article for three, six, nine or twelve months. How can saliva be changed by the use of tooth powder?

DR. McINTOSH: The acids can be neutralized by tooth powder or alkaline mouth washes. Believe acid saliva to be the first cause of dental decay.

DR. CUSHING: The paper failed to tell us when and where to use the different materials. With reference to the use of other materials, than gold, I believe it is often necessary to use them as temporary fillings. Do not believe in the therapeutical effect of oxyphosphate, but time, use, the absence of shock to the patient, and the non-conducting properties of the oxyphosphate, are the sources from which the benefit is derived. It is well to insert these temporary fillings, but we cannot always tell just when and where to use them. The causes of failure, are manifold. Will only speak of one that we commonly see, viz: from over-malleting. A large proportion of failures, in cases where gold is used, is due to that cause—not from too heavy, or too long continued malleting, but from carelessness, especially at cervical margins. The enamel is slightly fractured, causing a failure in time. In some cases we can see where it is fractured, but in others it occurs where we cannot see it. The cavity may have been well prepared, but if hard blows are used upon the first pieces of gold, the

cervical wall will be injured, and extreme care should be used to prevent injury at this part of the cavity. That is one great source of failure which has been overlooked. If we could examine these cases with the microscope, we would find many fractures where we suppose the margins to be perfect.

DR. K. B. DAVIS asked Dr. Cushing if he considered the oxyphosphate a perfect non-conductor?

DR. CUSHING: Not a *perfect* non-conductor, but better than gold.

DR. MOODY asked Dr. Cushing if he thought soft teeth would get harder under the oxyphosphate?

DR. CUSHING: Thought there was no question but that they would in many cases. A case reported by Dr. Spalding, where the teeth of a young lady that were very soft and chalky, but became much harder by the use of acid fruits. In some cases the whole tooth is soft, and yet may be preserved by filling, if the margins are sufficiently strong to pack the gold against, especially if the cavity is on the grinding surface of the tooth.

DR. MCINTOSH: If one could write a paper, and read it before a dental society, then re-write it, he would make some changes. Would not fill proximal cavities in school children's teeth with gold. Their teeth are soft and easily broken down, owing to over-work and the poor ventilation of school rooms. Does not fill buccal cavities with gold. Places amalgam under the gums in deep proximal cavities and dismisses the patients until it hardens, brightens the surface, and the gold adheres to the amalgam, and is sure he saves himself and patients much trouble. Does not fill wisdom teeth unless there is plenty of room. Is in favor of gold, but believes over-malleting is a cause of failure.

DR. TAYLOR: Lack of finish is a cause of failure. Another cause of failure to those of us located in country towns, is lack of time. Trying to do too much in a given time. Ill health of the patients is still another cause. Would not fill permanently in suspicious cases but fill temporarily, and wait. One filling material that cannot be bought, is good common sense. The man who has that, will have few failures. Too much or too rapid wedging, is another cause of failure.

DR. LAKIN: I wish to say on wedging that I have not used rubber for some time, because of its injurious effects. Use cotton instead, and have the patient place the cotton between the teeth

to be operated upon, the evening before the operation is to be done. Then use orange wood dipped in shellac varnish, (to hold the wedge in place). Dr. McIntosh has spoken on the loss of teeth in students. Would like to hear more on that question; for so often failure comes in those cases, where we so little expected.

DR. DAVIS asked Dr. Cushing's opinion of the germ or "bug" theory.

DR. CUSHING: I do not feel very well qualified to speak of bugs, don't think any of us know very much about it. Think Dr. Black's theory as reasonable as any. Dr. Miller of Berlin, claims to have made experiments out of the mouth and produced decay, and by Dr. Black's theory we can see how this is. No one claims that they are the first cause of decay. The enamel must first be broken down to give the germs a chance to work. The theory of decay has not been satisfactorily explained. Over-hanging walls of enamel often cause failures. Is not safe to leave them. They must be cut away. Would also cut away lateral walls in proximal cavities to prevent contact of tooth substance and to secure good sound margins. The thin walls of enamel *must* be cut away.

DR. TAYLOR asked Dr. Cushing if there was not danger of cutting too deep?

DR. CUSHING replied that there was.

DR. CALL was glad to see that point brought out. Has commenced at the grinding surface and built down where it was difficult to start the filling at the cervical portion of the cavity. Lateral under-cuts in proximal cavities are worse than nothing. There is too much malleting at cervical margins.

DR. TAYLOR: Explained that the enamel runs down to a knife-edge and terminates just under the gum where it has the least attachment and is easily loosened or driven off. Thought the short, flat teeth were harder, and there was not the same necessity for cutting away the lateral walls that there is in those with *bell-shaped* crowns.

DR. CUSHING: Nine-tenths of the best operators do not cut away enough in proximal cavities in molars and bicuspid. Would recommend the use of the magnifying glass in examining and preparing cavities.

DR. CALL: Had found great help from the use of magnify-

ing glasses. Is it good practice to use amalgam under the gum and gold over it?

DR. CUSHING: If any one can save teeth in that way it is good practice for him, but he had not so used it, theoretically it was not good practice to use two metals in one cavity, but it does not seem to do any harm. Had repaired old gold fillings with tin or amalgam. They are matters of experience, and in fact all our practice is empirical. Should not be afraid to use amalgams under the gum and soft gold over the amalgam, and if he found a case where he could *not* use gold under the gum he might try the amalgam.

DR. MCINTOSH was glad to hear Dr. Cushing say that. To fill all difficult cavities with gold, is too tedious for both patient and operator.

DR. CALL: If amalgam is good enough for one part of the cavity, why is it not good enough for all.

DR. MCINTOSH: The gold is more sightly and makes a better looking filling, while amalgam darkens the teeth.

DR. TAYLOR: Dr. Kingsley advised this years ago, in cases where it is too difficult to adjust the rubber under the gum. Dr. Smith, of the Philadelphia College, was, at times, some years ago, quite enthusiastic over this method. I have used it in some cases. The amalgam should be finished when inserted, and the gold filling made at a subsequent sitting.

DR. NEWKIRK, wished to emphasize one point which had not been well brought out, and that was, a self-cleaning surface. Recommended slow wedging and the use of the wedge while filling, to support the teeth; hold them firmly in place, and to afford more room while operating. In flat, straight teeth, would leave contact at or near gum, and open at the grinding surface. Failures occur from beveling edges insufficiently. Thinks no acute angles should be left, and undercuts should be prepared very carefully and no deep undercut left. Starts proximal fillings with soft cylinders, putting in several, and condensing by hard pressure, until sufficient gold is introduced to prevent breaking the enamel at cervical margin. Place the cylinders against the lateral walls first, approach the center from each wall, until one cylinder placed in the center will make a wedge to prevent the gold from springing up.

A YOUNG DENTIST'S EXPERIENCE.

BY DR. C. H. SHERWOOD, WENONA.

[Read before the Central Illinois Dental Society.]

SOMETIME ago I received a note from one of our prominent dental brothers, asking me to write an essay for the Central Illinois Dental Society: I was much surprised, yet felt myself highly honored.

At first I thought myself incapable of writing anything worthy the attention of so great a body of men,—men, who are far above me in ability and experience—yet, being a *member* of this same body, I considered that I ought not to refuse doing what I could, although it be but a mite,—“Great oaks (sometimes) from little acorns grow.”

I received another note from our worthy president, stating that he was glad to learn that I was going to help in the society, and that it would not only do it good, but *I* would be benefitted. The last statement I heartily believe. I hope you will pardon me for using the much abused and egotistical *I*; I would rather hear some one else talk, but the nature of my subject compels me to do so,—I know of no other young dentist's office experience than my own,—it is barely possible something may be said, from which other young dentists just starting in the profession may get a *hint* of good.

Four years ago I entered the field a full-fledged dentist,—I thought so at that time, but since have found many pin-feathers, many of them I have kept under cultivation; more than that I find new ones every day, but I have ceased to worry about them, only I cast aside the poor ones and *try* to keep the good.

I had a diploma—have it yet—and thought all that was necessary for me to do was to sit down in some *city* and reap a fortune,—not that I thought no more study was required, but that I would have so much to do, that no time could be given to that purpose,—but I did reap the fortune—there was more real, hard, solid *experience* about it, than hard money; however, it did a good work; I found there was more for a dentist to have, than a dental *collegiate* education; don't misunderstand me, a college

education is a most excellent thing ("the more, the better"), and should be obtained if possible, but is only the smallest beginning.

The young dentist must study till he is old, improve himself to the best advantage by the opportunities afforded in his profession, and work faithfully and conscientiously till his hands are too weak and his eyes too dim for him to do justice to himself and his patients, and till he is called to another world,—and to *my* thinking, a good, faithful, patient, conscientious *dentist*, when he leaves this world, ought to go to heaven.

I settled myself in one of our western Illinois cities, had a good location on a well traveled street, newspaper office near, a popular physician across the street, and an eye and ear doctor in the next room. I was splendidly situated—to wait nearly a month for my first patient.

It seemed rather hard on me at first, but by degrees I became accustomed to the surroundings, and then it was that I began to make use of my books and journals.

My first patient, a young man, came to me one night about eleven o'clock, and wanted extracted the second, right, superior bicuspid, and I immediately took out the *cuspid*; you can perhaps imagine how astonished I was on discovering my mistake; but I did what I could to partially atone, by replacing the tooth in its socket and binding it in place by means of ligatures,—I saw the patient six months ago, the tooth looked well, and patient said it had given him no trouble.

That was the second and last sound tooth, which I ever extracted unwarrantedly, and I took a lesson which has not been forgotten.

After this, my first patient, I had calls occasionally, and several times one of my neighbor dentists, who is a member of this society, sent me patients, for which I was duly grateful, and am still. I learned another lesson,—because all dentists are honest, it is no sign that *everybody* is the same. One of those patients owes me yet for what I did.

During a stay of nine months in that city, I made one hundred and fifty dollars, I felt that such prosperity was too much for me, and thought that four or five years in the place would make me feel more like a "bloated bond-holder," than a steady, improving, good-hearted dentist, so I moved to another place, whither I had been asked by a friend to come.

I found only one competitor in my second location, and he was a gentleman; our intercourse with each other was both pleasant and profitable—we didn't quarrel, we left each other's *individual* business alone; that reminds me to say that quarreling among business and professional men is unnecessary, it takes *two* to make a quarrel, leave the *other* fellow to do it all, he will soon get tired and quit, and people will think more of you for saving your mind to attend to your profession.

My competitor remained one year, and I sixteen months, and found at the end of that time, that nearly all the work to be done had been finished, at least, in the mind of the community.

From this I took another lesson; I learned that we should not locate in too small a place, especially where the people are non progressive. I was too poor to be an extremist in philanthropy.

During my stay I acquainted myself more thoroughly with the use of anæsthetics and particularly with ether and nitrous oxide gas.

Many days I have sat in my office wondering how I was going to live and pay my honest debts, but I never dreamed of giving up my study, and I said, and shall continue to say it; I have made a start in this profession, I am proud of it, and if I live long enough, shall die a *dentist*; I use the term dentist in its fullest, best sense. I don't want to be a mere "*hacker*" of teeth.

My next move was to my present location; my boyhood home. In the gospel of Mark, we are told that "a prophet is not without honor but in his own country, and among his own kin, and in his own house," and I thought a great deal on that point, before I determined on going to my old home, but I can now say from *experience*, that the above quotation means something else besides what I thought it did. If one is honest, upright, industrious, and improving, he need have no fear of going *any place*.

There are persons, no matter how honest, trustworthy or conscientious you may be, who will call you "no good," "dishonest," and "rascal." It don't pay to heed any such thing, the very ones who use such expressions will turn around and be your best patrons, if you will just leave them alone.

Traveling dentists(?) may come into your territory, and people will say, "he works cheaper" than you do, and this same

dentist (?) may talk discouragingly of your work ; let *all* the people talk and the dentist too, but *you* pay attention to your own business ; the people will soon get tired, when they see that you are doing good honest work at reasonable prices, and the traveling dentist (?) will die of nausea, caused by himself.

Your own private business is nobody's business but *yours*, yet there are those who consider it *theirs*, but because others do these things it is no reason why you should do them.

Always keep the shovel full of burning coals, and whenever opportunity affords, heap it on their heads ; it will do more good than all the *retaliation* in the world.

"When men shall revile you, and persecute you, and shall say all manner of things against you falsely," they shall have their reward, but not in the way one might desire ; more than this : "If thine *enemy* hunger, *feed* him ; if he *thirst* give him *drink*, for in so doing thou shalt heap coals of fire upon his head," and he will be ashamed of his wrong doing, and become your friend.

I have given little incidents of an office experience of four years, which are very likely to occur with any young dentist in his first years of practice ; if I have said anything which may be of use to any one, I am satisfied.

Correspondence.

"I charge you that this epistle be read."

HYDROCHLORATE OF COCAINE.

EDITOR JOURNAL :—Below are described a few cases in which I have used the new local anæsthetic muriate of cocaine. The injection in each case was 5 drops of a 4 per cent. solution.

J. F., a gentleman about thirty years of age, presented himself with the right inferior second molar, lingual portion broken away and labial portion a mere shell. In attempting to extract it was broken and caused the patient so much pain that I decided not to make another effort until I should have some muriate of cocaine. It came about five days afterward. The patient had no faith in it because a prominent physician had so expressed himself (to the patient) in regard to its use in the extraction of teeth.

I injected the gum near the tooth. Waiting five minutes I punctured the gum with a sharp pointed instrument. The patient said that he could feel it but it was not painful. Waited two minutes longer and dissected away the gum, the patient showing no evidence of pain. Forced the beaks of a cowhorn forceps through the process into the bifurcation of the roots separating, but leaving them firmly fixed in the alveoli. I then removed the roots. In answer to a question, the patient said, "It did not hurt a bit."

G. C., a lad of fifteen. Right inferior first molar decayed away to the margin of the gums. After injecting and waiting seven minutes, extracted the tooth. The boy said he felt it, but it was not painful.

Mrs. W.—Left superior first molar and root of adjoining bicuspid. After injecting and waiting seven minutes, extracted them. She said, "I absolutely did not feel it and will never dread tooth pulling after this." She then concluded to have removed the root of the right inferior third molar. It was nearly covered by the gum and very sore from ulceration. After injection waited only five minutes and there was some pain. Think a better result would have resulted if I had waited longer. For twenty minutes after the first injection the patient remarked that she could pinch her lips and not produce pain and she thought a piece might be cut out without pain.

O. F. B.—Funnel-shaped root of right superior first bicuspid. Extracted after injecting the labial portion of the gum and waiting five minutes. The patient said insensibility was perfect on the labial side but imperfect on the palatine.

A German Lady.—Right inferior first molar ulcerated and very painful. Pain ceased two minutes after injection and five minutes after lanced the gum, causing no pain. The tooth was hard to extract and the patient said she felt no pain until the tooth was nearly out.

A lady about 22 years of age. Right inferior second molar much decayed. Waited four minutes after injection and extracted. Patient felt pain on lingual but not on labial side.

I have detailed these cases that others may be induced to try this new agent and report results.

E. M. ROBBINS.

THE OHIO DENTAL COLLEGE.

DEAR DOCTOR WATT:—It is not so easy to comply with your request to “tell me something about the old college.” That is, to tell something that you don’t already know about it.

I have just walked through the operating rooms and the laboratory, and have looked over this student’s and that student’s shoulder, from chair to chair, and from bench to bench, and I need not tell an old professor like you, that “the boys” are doing their best. The scene is one of the utmost industry; and the well dressed patients who are awaiting their turns, seem to be fully impressed with the fact that all this means *business*. The professors having charge of the so-called “practical departments” go from student to student, giving a hint here, a helping hand there, here a clinical lecture, there some good advice that sometimes sounds almost like reproof for some (natural) awkwardness on the part of a youthful operator. How much a young dentist, and an old one too, for that matter, has to learn! What a regular and systematic training of fingers, and eyes, and backs, and I was about to say legs, is required, before an operator has learned to stand conveniently and gracefully and comfortably, and perform skillfully the delicate operations upon living tissues that are daily and hourly required from the hands of the dentist? Just what a great work it is, for the teacher who conscientiously tries to train young men in the lecture room or infirmary, no body can know better than you. As I sit here, in the “faculty room,” the thought comes to me, what if these old walls could, by some process or other, be made to give back the sounds of the voices of by-gone teachers! I feel like taking off my hat reverently, as I think of it. Listen! Can you hear the faint and ghostly sounds from the adjoining lecture room? It is the voice of Melancthon Rogers—now we can hear Taylor, and Chapman, and Mendenhall, and Wood, and Vaughn, and H. R. Smith. Sacred to the memory of these departed ones, yet the old walls give out distinctly the eloquent tones of Taft on Operative Dentistry, and of Watt, —now don’t blush, because you know, and the present class, and every past class of students know, that the walls don’t have to talk, to remind them of Watt’s “Dental Chemistry.” Go down

and ask the juniors in the laboratory about their gold alloys, etc., and go into the operating rooms and ask the seniors about the chemical theory of dental caries, and about "different kinds of dental caries," and see for yourself if the walls will have to recall the voice of Dr. Watt.

The days in Cincinnati are not long enough for our infirmary practice, and the faculty having investigated fully the advantages and disadvantages of the Brush electric light, and the so-called incandescent electric light for operative purposes, have been compelled to resort to city gas-light and ingeniously arranged reflectors, and now, a dozen chairs or so, are lighted by argand burners and reflectors—the design of the faculty—which furnish an excellent substitute for daylight, for late work and evening work at the chairs by the students.

One thing I might mention that may be of interest to the prospective dental student, and that is, that the demand of the times has been acceded to by the faculty, and a spring course of lectures will be inaugurated in extension of the regular winter's course. The lectures to begin the latter part of March or the first of April and continue till about the first of July. In addition to the lectures, the infirmary will be kept open throughout the entire year, for the training of students in manipulative practice. The college has what may be called a practice of its own. The students, under the supervision of professors and demonstrators, have a reputation for their surgical and operative excellence, and we cannot afford to close the doors of the college for half the year, as heretofore, and lose the fine opportunities offered for more thorough practical training. Juniors and seniors, and even graduates, need the drilling, the opportunities for repetition of operations, the training in theory and practice, that cannot be obtained during the limited college sessions.

Now, my dear Doctor, I cannot think of anything more to say about the old Ohio Dental College, excepting that she is doing her best to maintain the reputation she has ever held among the colleges of the world, and to keep her skirts pure and clean, so that her sons at home, and her sons in foreign lands, many of whom you and I know well, may never have occasion to blush for their *Alma Mater*. Can you not make it convenient to attend the meeting of the alumni on the 3d of March, and the commencement exercises of the College on the 4th of March?

Yours truly,

C. M. W.

"DENTAL PROSTHESIS."

EDITOR JOURNAL:—In reflecting upon the article by Dr. Wayne, in the January number, I cannot but feel that he, as well as many other writers of the present time, has hit upon the true cause of the degeneracy of what is usually termed the "mechanical" branch of dental surgery. But we cannot all follow our inclinations, as to the construction of an artificial denture, and use the more expensive methods for the obvious reason that we nearly all have a large number of patients whose means will not admit the more costly appliances, still they must be provided for.

Celluloid, when properly made, using plain teeth, imitates the natural gum very closely, but the ill-success of many in its manipulation, has after a short trial driven them back to the section blocks.

In place of celluloid I would suggest that rubber be used, which is easy of manipulation. Pack the facing of the plate with best pink. Make the model exactly as the finished plate is wanted, using pink paraffine and wax. Burnish tin foil number 60 lightly but smoothly all over the plate and stipple the gum with a serrated plugger; leave that on the palatine surface just as smooth as possible. Invest the model in the lower half of flask so that when the upper half is removed the whole model of the plate will go with it, remove the paraffine with hot water, cut heavy gateways all round the cast for escape of surplus material, before packing cover the cast with number 8 tin foil and coat it with a solution of castile soap. After vulcanizing and cooling remove from flask and the plate will be found already finished except trimming the edges. Clean the pink front with soft hand brush, chalk and alcohol.

The hard, polished surface will absorb nothing and is not as likely to produce sore mouth as a polished plate.

Now a word about mixing plaster, as in this kind of work an air bubble cannot be tolerated. Fill the bowl nearly full of water and sift coarse, slow setting plaster, slowly into the water and as each atom becomes saturated, it will sink; when enough is in the bowl, pour off the surplus water after a moment, then proceed to run the cast or investment, allowing plenty of time for it to settle to place.

A. B. CRAWFORD.

Societies.

"Wherewith one may edify another."

CHICAGO DENTAL SOCIETY.

Reported for the Journal.

THE regular monthly meeting was held in the rooms of the Chicago College of Dental Surgery, on Tuesday evening, Feb. 3, 1885, President Harlan in the chair. Thirty members were present and fifteen visitors. Dr. J. H. Woolley read a most creditable paper on "The First Permanent Molar." The following is a brief synopsis:

I am inclined to compare the first permanent molar to a waif, or out-cast in the street, that is neglected through ignorance of its value. At the time when the first permanent molar is erupting, there are physical forces at work which disturb its harmonious growth. Neglect caused through ignorance on the part of parents who think these teeth belong to the first set, plays a prominent part in their early destruction. If parents were familiar with the time these teeth usually erupt, and then placed their children in the hands of a competent dentist, a large majority of the teeth could be saved. I believe it to be a mistake to remove these teeth for the purpose of correcting irregularity. Quoted Dr. Black as saying, that, "My study of the comparative liability of the teeth to decay at the different periods of life, show clearly, that the first molars are attacked in the first two or three years after eruption, much oftener than any other tooth. But in after years they are attacked less often than the second molar. If the first and second molars are in a fair condition, at the age of fifteen, the chances for the first are better than those of the second." The coffer-dam should always be used in making an examination of these teeth, by this means, we are better able to explore the decay. Very often a slight decalcification is discovered, which can be stopped by a small filling; but if neglected, will spread and soon involve the whole crown. My treatment of these teeth, is as follows: In large cavities, where the inner surface is sensitive without pulp exposure, I fill with some one of the cements, allow-

ing this filling to remain in the tooth from one to six months. I am careful first to flow over the floor of the cavity the cement in a soft condition, allow this to harden, then finish with the same material mixed very stiff. When this filling begins to show wear and the patient has had no trouble with the tooth, I partially remove the cement, leaving enough to cover the floor of the cavity and am exceedingly careful that none of the cement is left clinging to the margins of the cavity. I then fill the remaining portion of the cavity with gold and tin combined, or whatever material seems best adapted to the case.

In conclusion, will say, that if these teeth are taken in time, and carefully watched, it will be the fault of the dentist, and not the teeth, if they cannot be saved in most cases.

DR. NOYES: The first molar eminently deserves care and retention, as it possesses the largest amount of masticating surface; observation will bear out this opinion. We cannot hold a general rule as to its extraction.

DR. AMES: I believe in retaining the first molar on general principles, as it is the most useful tooth in the mouth; was taught to extract this tooth as a rule, but observation in practice has demonstrated, that the second molar will tip forward and good masticating surface is lost.

DR. BROPHY: My treatment of the first molar, where large cavities exist, consists in removing a portion of the decay and fill with phosphate of zinc, place in stiff, and not produce pressure on the pulp; after a time I cut a portion of this out and refill with chloride of zinc, being much harder will resist the action of mastication; do not believe in the use of amalgam for filling these teeth. If caries has attacked the proximal surface of a temporary tooth, it will be established on the surface of the permanent molar joining. In such cases I separate and fill temporary molar with cement.

DR. MATTESON asked for information in relation to a case now under treatment; the child fifteen years of age, is troubled with imperfect occlusion of the teeth, owing to the second molars meeting first, which does not permit the anterior teeth to come together by about the three-sixteenth of an inch. The first molars are in a bad condition.

DR. ALLPORT: In answer to Dr. Matteson's question would say, grind off the crowns of the molars until the occlusion was

natural. The treatment of the first molar requires the most enlightened judgment; and this is obtained only, by careful experience. It is a good rule to save all natural organs. It is also a good rule to dispose of all organs that would endanger other organs. I would say invariably extract the first molar if the pulp is dead.

DR. MARSHALL: I do not hesitate to extract the first molar with its opponent, previous to the twelfth year.

DR. CROUSE: I do not like to antagonize older experience, as it leads young minds to become muddled. I would say as a rule *not* extract the first molar. My treatment for the early decay of first molars is to fill with tin. Cavities which appear on the anterior proximal surfaces I fill with gutta percha, until the temporary molar is lost then I re-fill with gold.

DR. NICKOLS: I wish I had never seen a first molar. I have labored perseveringly for many years to save all that came into my hands, as I consider them valuable teeth. A candidate for graduation in a medical school ought never to have a diploma until he could pass a satisfactory examination, relative to the first molar. Physicians in practice are to blame for the loss of many first molars.

R.

MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

THE Forty-first annual meeting will take place in the Lecture Room of the Ohio Dental College, Cincinnati, at 10 o'clock A. M., Wednesday, March 4, 1885.

It is especially desirable that this meeting be unusually large, as it is expected that a number of papers on various subjects pertaining to the profession, will be read by well-known writers, and in view of this, the officers expect that every member will make it a point to assist by his personal presence. A most cordial invitation is extended to all members of the profession, no matter where they reside, to come and enjoy themselves and profit by the interesting discussions that will take.

PROGRAMME.—1. Progress of Dental Education; 2. Recent Theories Concerning Caries of the Teeth; 3. New Remedies for the Treatment of Oral and Dental Diseases; 4. Improvements in

Prosthetic Dentistry; 5. New Methods and Materials for Filling Teeth; 6. Incidents of Office Practice.

We insert the above, from the announcement of the Executive Committee, in the hope that you will all go to this meeting of one of the best of our societies. You may think that you can afford to stay at home and cannot afford to go, but it is just the other way. About nine-tenths of the profession are stay-at-homes, yet the greatest progress made in dental science has come from associated effort.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

THE third meeting of the National Association of Dental Examiners, will be held at New Orleans, on Tuesday, March 31, 1885.

All State Boards not already members of this Association, are earnestly invited to send representatives to this meeting.

GEO. H. CUSHING, Secretary.

SIXTH annual meeting of the Indiana Dental College Alumni, will be held in the Lecture Rooms of the College, on Wednesday, P. M., March 4, with a banquet to the graduating class in the evening. A large number have promised to attend and renew old acquaintances.

ROBERT VAN VALZAH, President.

THE CENTRAL ILLINOIS DENTAL SOCIETY.

WE would call attention to the excellent papers in this number from the above live Society. Several other papers read at the same meeting, in October, have not reached us, but we hope to present them in a future issue.

OHIO STATE DENTAL SOCIETY.

WE have received from the Secretary the following list of committees:

EXECUTIVE.—F. H. Rehwinkel, Chillicothe; C. R. Butler, E. G. Betty.

VOLUNTARY ESSAYS.—J. Taft, Cincinnati; Geo. Watt, David Gibbons.

PUBLICATION.—W. H. Sillito, Xenia; J. R. Callahan, H. H. Harrison.

ETHICS.—F. H. Rehwinkel, Chillicothe; C. H. James, I. Williams.

MEMBERSHIP.—C. H. Harroun, Toledo; A. F. Emminger, G. W. Keely.

DENTAL LAW.—F. H. Rehwinkel, Chillicothe; F. A. Hunter, C. H. James.

THE SOUTHERN DENTAL ASSOCIATION.

THE 17th annual session will be held in New Orleans, La., commencing Tuesday, March 31st, and continuing four days.

This promises to be the largest and best meeting ever held in the South.

The various railroads will have on sale cheap excursion tickets, and those who intend visiting the World's Exposition, will find this the most pleasant month in which to do so.

The display of Dental Instruments will surpass any heretofore made.

The Committee of Arrangements will see that ample provision is made for the accommodation of all. Those wishing to engage rooms in advance, will correspond with Dr. J. R. Walker, Chairman Committee of Arrangements, corner of Barone and Common streets, New Orleans, La.

Books and Pamphlets.

MICROSCOPICAL STUDIES UPON THE ABSORPTION OF THE ROOTS OF TEMPORARY TEETH. By FRANK ABBOTT, M.D., New York.

This is the Whitney prize essay of the Dental Society of the State of New York, 1884 (re-printed from the *Independent Practitioner*), and is worthy of the careful study of all progressive members of the profession.

PREPARATION OF THE MOUTH FOR THE INSERTION OF TEETH OF SUBSTITUTION, by W. H. ATKINSON, M.D., D.D.S., N. Y., pages 10.

This little pamphlet contains some excellent suggestions on the importance of the preservation of the roots of teeth in their sockets, the greater part of it, however, is taken up with the author's peculiar views of development, nutrition and absorption, and will well repay careful reading.

FACTS. A quarterly dental journal edited by E. M. MARTIN, D.D.S., M.D.
The Facts Publishing Company, Chattanooga, Tenn. 50 cents a year.

We welcome this new and bright little journal. It contains 26 pages of reading matter and the publishers say is "independent of any dental depot or dealer." We presume they "do not count" the editor whose advertisement of his new amalgam appears on page 15 and the third page of the cover.

TRANSACTIONS OF THE ODONTOLOGICAL SOCIETY OF PENNSYLVANIA FOR 1879-80-1-2-3.

This is an illustrated volume of more than 200 pages of essays and discussions by some of the best known operators. Many or all of the papers have appeared in the dental journals, but we have no doubt some of our readers will be glad to get them in the more permanent and accessible form. In cloth \$3.00. Address the Sec'y, AMBLER TEES, D.D.S., 548 North 17th Street, Philadelphia.

A CLINICAL REPORT ON SOME USES OF MURIATE OF COCAINE
IN OPHTHALMIC PRACTICE, by Dr. S. C. AYRES, Cincinnati.

NOTES ON STRABISMUS, by the same author.

Our thanks are due the author for the above reprints from the *American Journal of Ophthalmology*.

CAULK'S DENTAL ANNUAL, 1884-5, is "devoted to the collection and dissemination of statistics relating to the business and practice of dentistry," and may be had by enclosing 25 cents to the editor and publisher, L. D. CAULK, D.D.S., Camden, Del.

NEW AND IMPROVED PROCESS OF MANIPULATING GOLD, RUBBER
AND CELLULOID, ETC., by F. W. SEABURY, Providence, R. I.

Our Aftermath.

DENTISTRY IN THE UNITED STATES.

COMPILED FROM CAULK'S DENTAL ANNUAL.

There are twenty-one dental schools, including dental departments of Universities and Medical Colleges.

Twenty dental periodicals published. One annually; eight quarterly; eleven monthly.

Twenty States have laws regulating dental practice.

Of dental societies and sections of medical societies, there are about ninety-five: International one; National eight; State and Territorial thirty-six; Local fifty; besides the Society of American Dentists in Europe.

There are twelve manufactories of porcelain teeth, and about one hundred dealers in dental materials.

Missouri and New Jersey take the lead in having laws requiring practitioners of dentistry to be graduates of reputable dental colleges. Next!

About fifty patents pertaining to dentistry were granted last year.

There are about 12,150 dentists including sixty-one women. A woman is Demonstrator of Clinical Dentistry in the dental department of the University of Michigan.

THE DISADVANTAGES OF GLYCERIN AS A SOLVENT.—Vigier (*L'Union Pharm.; Memorabil.*) calls attention to the fact that, although glycerin is a valuable solvent, it should not be allowed to supercede fats in the preparation of ointments, for it is not absorbed through the skin. As a result of numerous experiments upon himself, he states that strong solutions of potassium iodide, morphine, atropine, and corrosive sublimate in glycerin not only fail to produce constitutional effects when rubbed into the skin, but do not appear in the urine; whereas, when incorporated with fat in like proportion, they are rapidly absorbed.—*N. Y. Med. Journal.*

THAT CACOZYME.—He is worthy of national gratitude who makes two blades of unnecessary grass grow where but one had a feeble struggle for existence before, how much more deserving of temporary immortality is he who establishes his claim to a new *cacozyme*, be it *bacillus*, or *micrococcus*, or *spirillum*, especially if he can tell us what to do with it!—*Henry D. Didama.*

NOT A GENTLE MAN.—Cardinal Newman says, "It is almost a definition of a gentleman to say he is one who never inflicts pain." If the cardinal is correct, and can prove his statement, it is pretty rough on the dentists. We are sorry for those excellent men, but that definition lets them clear out.—*Burdett.*

THE PRODUCTION OF GOLD.—Mr. Burchard, the director of the mint, estimates the amount of gold obtained from the mines in the United States, in 1884, at nearly thirty-one millions.

OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. V.

APRIL 1, 1885.

No. 4.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

THE DENTAL PROFESSION.

BY FRED. HOOPER HAYES, D.D.S., DOVER, N. H.

OUTSIDE the medical profession there is no art or science entitled to greater consideration than dentistry. As a specialty of medicine and surgery, it ranks with the first. Its origin can be traced back several centuries, but it is not till within a few years, that it has been recognized as a specialty of medical science.

The preservation of the dental organs is of vital importance in maintaining good health, for they have one of the most important offices to perform in the human organism. The process of mastication cannot be properly carried out unless the masticatory apparatus is in a good condition.

Many of the diseases of the intestinal tract arise from decayed or irregular teeth. The teeth are also necessary in assisting vocalization and to preserve the natural contour or shape of the face. There is, perhaps, no other part of the body more frequently attacked by disease, than the teeth. Many affections of

the oral cavity arise from other diseased parts. All lesions of the mouth are now regarded as in the province of dentistry.

The operation of extraction of teeth, is in some respects, the most difficult branch of our calling, involving in its successful performance, not a little surgical skill. It is one which, if unskillfully performed, may lead to very serious results and much suffering. Great improvement has been made in the instruments for the extraction of teeth. The painful and dangerous turnkey has been laid aside. Laceration of the gums and splintering of the alveoli, followed by exfoliation, have been produced by its clumsy use. Not infrequently has the claw been known to slip and drag out a sound tooth.

Formerly all diseases of the oral cavity were treated by the physician, the dentist being considered unskilled in all pathological conditions of the mouth. But now any disease, from the slightest pain to the tumor, first comes under the dentist's eye. The treatment of any abnormal condition of the mouth, should be done in a thorough manner, and our advice should be given conscientiously.

When an artificial denture becomes necessary, the dentist has an opportunity of showing forth his mechanical ingenuity and skill. Artificial teeth should closely resemble the natural organs as to shape and color. Many things are to be taken into consideration; the age, the sex, the color of the hair and eyes, whether the person be brunette or blonde. No two teeth of the mouth are of the same color. This hardly ever is taken into account. It is the contour and color of an artificial denture that shows the artistic taste of the dentist. Yet how many sets of white porcelain you see each day! To be sure a great many patients will not allow the dentist to make his own selection.

Before the invention of rubber, which has so greatly lowered the professional standard, the dentist used nothing but metal as a base plate and carved his teeth by his own hand, thus obtaining almost an exact likeness to the natural teeth. He was also a much better workman, as the employment of metal requires the utmost care in its manipulation, whereas rubber can be handled by a more careless workman.

Another great misfortune to the profession is the number of men entering it of but little or no previous education or training, which is not only necessary for its advancement, but for the suc-

cess of the dentist himself. Education tends to elevate him. It improves the taste, enriches the mind and refines the manners.

The dentist is often summoned as the most available medical man at hand; he will be summoned to attend diseases that require immediate action, as a severe burn, broken limb and the like; he will also be called upon to perform many surgical operations. For this reason he should read and study dental and medical works. He should take and read the different dental and medical journals. He should possess chemical and anatomical knowledge, and understand the relations of the teeth to other parts of the system, so that, in cases of disease of the oral cavity, a method of treatment may be adopted that is intelligent and successful. A skillful hand without a cultured brain can never make dentistry what it deserves to be. Thoroughness of preparation and execution, taking plenty of time for the work, is the basis for success. Hasty work is very imperfect work, while operations upon which sufficient time is spent, are far more likely to be successful.

People in general do not deem it necessary that the dentist should possess any knowledge of anatomy, chemistry and pathology, in order to treat diseases of the teeth. But this idea is being speedily removed from their minds. No longer is a man considered competent to perform dental operations without a college training. From the chair on pathology the student receives lectures on the period of gestation, one of special interest to the dentist. Every attention should be given to the preservation of the health of the mother with special reference to the physical integrity of her future offspring. Also care of the general health before and after eruption of the teeth; reference to the food of infants and its effect on the teeth in later years.

Physiology should be as well understood by the dentist as the physician. It would be absurd to teach it at all without going into its consideration in the most general manner.

When a patient presents himself to us, it is of the utmost importance that we exercise judgment in deciding what should be done in each individual case so as to give the patient the greatest amount of benefit; the great question when a case presents itself is—what to do for that individual case, all the circumstances considered.

There are many links requisite to complete the imperfect

chain of information we possess in relation to the human organism. We are no longer obliged to work in the dark. By means of the microscope we are enabled to examine the organization of all the tissues, even their contents.

Dentistry, as other branches of medicine, cannot be viewed as an accurate and unerring science. Failures accompany success; opprobrium, emulation. We are dealing with living and constantly varying organisms, each possessed of its peculiar idiosyncrasies. Thus a remedy that has met the requirements of many will suddenly produce reverse results and aggravate conditions which it formerly cured.

Meetings and societies have been formed for the purpose of taking steps to improve the position of the dental profession. It has become evident, that notwithstanding the efforts of societies and schools, there is an increasing feeling that something is wanting to complete the establishment of dentistry in the honorable position in the public estimation which it ought to hold.

But dentistry as it is too commonly practiced—dentistry as it is represented by a great number of ignorant and incompetent men—does not constitute a science or art. The better men engaged in this pursuit are dragged down in the public estimation to a level with such persons as those to whom I have referred. They forget that the great object of dentistry is the preservation of the teeth, as nearly as possible in the condition in which nature has produced them. They seem to think it means nothing but filling them with some material to replace the loss caused by decay with no thought of the future condition or the manner in which it should be inserted, to insure the greatest amount of good. The man who fails to do this, when he has *entire* control of a case, is either an incompetent or unfaithful practitioner.

Dental caries is making its appearance in nearly every inhabitant of all civilized countries, in spite of our efforts to prevent it, so that as one generation passes away another inherits its diseases.

Our practice, although differing in its details from that of the surgeon, is identical with regard to its performance. Our great object should be to elevate the profession; to do all in our power to enlighten others and to make ourselves proficient.

Each one, then, should cultivate an aversion to deception, harmonize personal and professional interests, and resolve to attain proficiency.

THE DENTAL PROFESSION AND THE PUBLIC.

BY DR. W. STORER HOW, PHILADELPHIA, PA.

[An Address delivered before the Graduating Class of the Ohio College of Dental Surgery, Cincinnati, March 4, 1885.]

It would prove a difficult and tedious task to define and classify the various callings, occupations or employments that are now termed professions, and have, as exponents and exemplars, regularly organized corps of teachers in colleges duly authorized to confer appropriate degrees. Our design is here to consider, briefly, some of the relations of the dental profession and the public.

As graduates of this dental college, you are in the presence of a representative portion of the general public, to whom you are now commended as qualified to perform the peculiar functions of the dental profession, which, in many of the United States, has the sanction of laws specially framed to protect the public from unqualified and pretending dentists. You are, therefore, here, and now, formally introduced to this part of the public, and are immediately to receive a formal letter addressed, "To whom it may concern," certifying your ability to perform such professional service as, at any time, in any place, may be rightfully required of you.

In some of our States there have been enacted laws prescribing that in the future only graduates of a reputable dental college shall begin the practice of dentistry: and this fact implies the public expectation that you will not only possess the requisite professional qualifications, but will have also the mental furnishing that accompanies reputable character in every position of trust or responsibility. You, therefore, commence the practice of dental surgery with a degree of eminence, from which you are to rise or fall, in accordance with the rules under which you shall determine to work.

You are at the beginning of a course which each for himself or herself must deliberately direct at every stage of progress, and emphasis can not too often nor too strenuously be laid on the working value of right conduct. It is, therefore, of the first importance to have a clear and abiding conviction that the

morally right thing to do is the *best* thing to be done under all circumstances. The public is an aggregation of individuals, and the moral, or, perhaps, we should say, the immoral condition of the general public to-day is indicative of a low law of conduct on the part of individual leaders.

It is probably within the memory of some who are present that there was once a pervading sentiment of respect for members of what were then termed the learned professions; and it is undoubtedly true that such respect was based upon the consideration that those gentlemen were graduates from institutions which had ethical origin, and were, therefore, presumably as doctors or teachers of the morally right ways of action, eminently worthy of deferential respect; and I call your especial attention to this fact that colleges and universities have been fundamentally based upon Christian ethics.

Differentiation, or *difference*, is a word of common occurrence in scientific discussions, but *deference*, one now seldom meets, either in theory or practice; and perhaps these two words may serve best to characterize the two epochs—for that was an age of respectful deference, and this is an age of difference, without respect to anybody or thing. Then, men passed each other with polite deference; to-day, they meet with looks that mean, and sometimes find expression in the words, "Get out of my way!" That is the difference!

The mere difference between strength and weakness, inexperience and skill, poverty and wealth, or ignorance and intelligence, does not account for strife between individuals or the array of one class against another. In a community the cause of human variance and enmity is to be found in the morally bad qualities of men; and, on the other hand, men of good character can so influence their neighbors that the bad members of society will not become so publicly shameless and vicious as to be altogether lacking in the outward forms of decency and deference. For the present deplorable state of affairs, notoriously bad men are not primarily responsible, nor to be blamed. Doctors or teachers, of everything but morality have of late years multiplied, and though the results in merely physical achievements have been admirable and amazing, yet the ascendancy of physics, unaccompanied by moral metaphysics must surely prove delusive as a scheme of scientific social advancement.

An immoral community is only possible when and where the

professing teachers are unsound, and then it is the teachers, and not the lower classes who are to be blamed.

For example, the editorial profession has a prominent place among the teachers of our times, and if questioned on the subject the doctor of news,—though that title is not distinctly exact, since all doctors are professionally teachers of specialized news to their hearers,—the doctor of news will tell you that he imparts what the public *wants* to know, not what he thinks the people *ought* to learn. If these teachers had graduated from some rightly founded and manned college of literature, or political economy, it would be strange if they had failed to learn that the *taught* do not prescribe what, or how they shall learn, the proper option of the electing pupil being merely to choose the *course* of the desired instruction: and surely only a professedly or secretly vicious teacher would accede to either an expressed or even implied wish to be led into vicious courses!

It follows that it is the wilfully depraved doctor of news who is the chosen instructor of the vicious classes, yet what shall be said of the “upper classes,” who, themselves and their children, are in attendance at that same school?

The editorial fallacy is a far-reaching one. Parents are the first teachers of their children, and I beg you to observe that, in the average family of to-day, the child is taught, not what it ought to learn, but what it wants to know. And the parent will reply, if questioned (did he learn this from his doctor of news): “When I was a child I was obliged to do thus and so, and I do not intend my child shall thus be forced against its will.”

Many professional and business men, also, frequently say, “I have no time to give to politics, or even to go to the polls, where my vote will be neutralized by that of a miserable loafer. Let those who have nothing to do or lose run the political machine.” If one of those men who are too busy to attend to the governmental business that is the basis of every other business, could for a moment put his ear to a telephonic transmitter on the underground line that the political wire-pullers are running, he might catch the refrain of the song of the coming campaign: “Boys, boys, boys, the tramps are marching.”

In the light of the preceding considerations, is it not obvious that the radically wrong teaching of to-day leads away from the obligations of duty, towards the abolition of all forms of moral restraint, and the bringing in of an era of (shall we say) “Free

beer and no Sunday!" If it is a demonstrable fact that public affairs and professional politicians are fast coming under the control of the class familiarly termed "the boys," may it not be said that the significant difference between the Pilgrim past and the Proletarian present is that the former *civilization* sought to produce as its highest type, a very respectable old gentleman, while the latter *uncivilization* is raising the very "old boy" to make him President.

The single aim and object of this necessarily short address is to confirm you in an unwavering adherence to convictions of duty in all your relations to the people among whom you dwell; and it only remains to add that acting upon principle does not mean the obtrusion of one's own views upon his neighbor, but it does involve a due consideration of the best interests of the neighborhood under a keen sense of a responsibility which is inseparable from the circumstance that you and your neighbors form one community; the good or bad character of which will inevitably depend upon your own personal and professional influence. We expect you likewise to maintain the honor and good repute of the dental profession: to be observant and studious in the endeavor to remove its defects and promote its advancement in means and modes of practice. Let your work be done with conscientious care, and your demeanor be calm and gentle. Great operative triumphs have been achieved by dentists, and there are yet greater victories to be won in the line of intellectual, social and moral cultivation. Do well your part in all, remembering, always, not to "go as you please," but to please as you go—not what you *want*, but what you *ought* to do.

As we now hopefully sunder our official relations with you, we beg you each to accept from us a bouquet of choice flowers of speech, which, if cherished in the memory, shall never fade, but yield a winsome fragrance that will draw your neighbor to you with the query: What means this pilgrim perfume of Arbutus from the Beulah Land?

"Come wealth, or want; come good or ill;
Let young and old accept their part,
And bow before the awful will,
And bear it with an honest heart.
Who misses or who wins the prize,
Go lose or conquer as you can;
But if you fail, or if you rise,
Be each, pray God, a gentleman!"

"Thus habit will add its power to each effort of the will until service becomes easy, sacrifice a pleasure, and duty a delight. Thus may you develop out of our dull and sluggish human nature a true manliness. The manliness of love, the manliness of truth, the manliness that wears the spirit on the brow, the manliness that bears the heart in open palm; no plan nor purpose that it fears to show, the manliness that never drinks, the manliness that never swears, the manliness that renders every honest service without shame, the manliness to help the weak, the manliness to pity, and manliness to pray."

"New occasions teach new duties;
Time makes ancient good uncouth;
They must upward still, and onward,
Who would keep abreast of Truth.
Lo! Before us gleam her camp-fires!
We ourselves must pilgrims be;
Launch our Mayflower, and steer boldly
Through the desperate winter sea."

DENTISTRY THEN AND NOW.

BY C. H. JAMES, D.D.S., CINCINNATI.

[Address at the annual banquet of the Alumni of the Ohio College of Dental Surgery, Cincinnati, March 4, 1885.]

Fellow Graduates of the Ohio College of Dental Surgery:

GREAT was my surprise at being informed nearly a year ago that I had been elected president of this association and was booked for an address for this reunion. "Ye gods and little fishes" what a weight of responsibility to be placed upon shoulders so small.

Well, after much mental potheration, I have concluded if the boys can stand it I can, and will try to fill the bill. I do not propose to present an abstruse professional topic, for that would necessitate deep thought and produce a state of mind antagonistic to an alumnal reunion, where we are all expected to lay aside care and such topics in order to have "a good old time." But have you ever thought much about your profession? What it is? How young, and how old it has grown in knowledge and attain-

ments in its short life? A few remarks on then and now, may not be out of place.

Previous to 1830, the dentist was a very crude being, consisting of man and possibly turnkey, and his capabilities attained only to the knack of extracting teeth, and he had no local habitation or place. By degrees and with the assistance of some tools, by the use of which, with some skill, these sturdy pioneers were enabled to hew or carve out of bone or sea-horse ivory, a tooth or two to replace those lost, and, base plates not being in fashion, pivots and wires were resorted to, in order to produce a permanent fixture, or at least as permanent as the attachments would permit. Impressions were not taken in those days, but the gum was painted with rouge and alcohol to mark the point of impingement upon the bone; the carving, cutting and gouging process was continued until a perfect fit could be obtained.

Just previous to the advent of 1834, we are permitted to record a great revolution in the dental art, namely, the discovery of plaster for impressions, and the introduction by Stockton, of porcelain pivot teeth. What a luxury the infant profession enjoyed. Carving and pivoting became easy, although the former was not so often necessary. About this time the progress in the profession became so great that dentists began to provide themselves with permanent offices, and to offer inducements to the unfortunate to seek them, instead of the reverse.

This state of affairs together with replanting, transplanting, filling, with lead and tin, and swaging plates of gold, or silver, continued until the old code of secrecy could no longer be maintained, and members of the profession were anxious to publish to their co-laborers every advance they had made either by accident or close study. This resulted in the banding together of a few enthusiastic men for the purpose of instructing others in the profession of dentistry, and I think the first exclusively dental school was established in Baltimore, and next in order comes our "*Alma Mater*," second on the list as established, but second to none in energy and thoroughness, in every branch necessary to make the competent and successful practitioner.

I have thus given a brief sketch of the infant, and have sought diligently for an account of the youth, but this seems to be a voyage of life without youth, for the advance of the infant has been so great that he launched from infancy directly into

manhood, and there are a few of us present, who have kept him company from that day.

With the advent of colleges come associations, the former for the novice, the latter for the more mature; and who will dare affirm that associations, for the exchange of ideas and experiences, have not produced the rapid changes, that have previously been referred to.

Look at the present manhood of our profession, and then back fifty years, to the struggling efforts of the early pioneers; this, all in our lifetime.

We are now in the throes and agonies of "bridge work," having just been delivered from replanting and transplanting, all of which the infant profession endured fifty years ago, but possibly not so scientifically as now.

Thus does history repeat itself. We do not hear however, that the artificial branch of our profession was called "*Prosthetic*," because perhaps, our ancients were aware of the fact that the word had no application, meaning "prefixing a letter to a word." They might however, have spoken of *dental prosthesis*, for prosthesis means "the addition of an artificial part to supply a defect in the body, as a wooden leg, etc.," the etc. covering undoubtedly, the insertion of artificial teeth. These defects in the ancients may be attributed to the fact that in their day, common schools did not exist, and consequently, their early education was neglected, or their dictionaries were very much abridged.

However, in this one branch of our profession, it is my opinion that during the past twenty-five years, we have had little advancement of which to boast. For just as we had congratulated ourselves we had found the "*ne plus ultra*," in platina, gold and silver, the introduction of rubber and teeth moulded in sections, made their combination so easy, that the unskilled have turned their attention almost exclusively to the "prosthetic" (for here we find the term applies), and such very low prices, to conceal want of art or skill, that in the streets, churches, public halls and street cars, we are confronted with the monuments erected, in military array, to the total absence of art and skill, and can only wonder, that the æstheticism of our fellow creatures could for a moment, permit them to be made as conspicuous as grinning skeletons. But seriously, let me suggest a field of usefulness, that opens to us all. Let us endeavor to educate the public to a

standard of genuine art and skill in this department, that our efforts may result in a "thing of beauty and a joy forever."

Don't underrate the difficulties you will encounter, for dollars and cents are a weighty argument with the masses, but by gradual approaches and united effort we may succeed in restoring this lost art.

We turn now to another and more agreeable branch, where we think we can record true progress, based upon an advancement of knowledge, the result of much study and the deepest research. How we were all startled, about thirty years ago, when Prof. James Taylor timidly approached the subject that in dentine there was a recuperative property. The idea was not popular, but emanating from Prof. Taylor carried with it such assurance, that mildly toned opposition, and restrained scoffers. This theory would not now be disputed although sailing under different colors.

The various materials for filling teeth, are produced in better quality, and in greater number until we have many to chose from in order to meet emergencies. Amalgams have been cussed and discussed, resulting in the material being made so pure, as to completely capture some of its greatest enemies.

Instruments for working gold into splendid fillings, have been produced, and the "buzzing machine," or dental engine has contributed much to the happiness of the operator, but in some cases added to the horror of the patient. Then comes the rubber dam, of which too much cannot be said, although it is possibly used too often, and the restraint it places on the patient not infrequently causes him to reverse the terms, and speak of the damned rubber. We do not lose sight of the microscope, in this, the hour of our rejoicing, for to it we can ascribe much of our success. With its assistance, we have been enabled to see clear through a tooth, and it would not take much more to persuade us, that by its aid, we could see the tooth grow. The chemistry of our profession has not been forgotten, and has been the means of our arriving at certain conclusions formerly in doubt.

We come now to a part of the subject, huge in proportions, but made up of very little things; and with due respect we introduce the "Bug theory," which embraces Bacteria, Bacilli, Vibrios, Spirilli, et cetera, ad infinitum. Gentlemen and Lady, I shall not force you to accept either variety, you pay your money, and

can take your choice, only I advise you not to treat these little things with contempt, lest in the light of future progress, we may be compelled to accord them so great honors that our own importance may be totally eclipsed.

Electricity, that subtle substance that Franklin seduced from the clouds, by means of a kite, will probably play an important part in our profession, for do we not apply it as a motive power, to our dental engines? and does it not also supply force to our pluggers? being as easily controlled as the simplest instrument ever used for that purpose. Electric light is also being used for exploration, and I predict that it will be a very dark day, when it cannot be used to illuminate the oral cavity during a protracted operation in filling. I have lived long enough, nearly, to scout the idea of impossibilities, particularly in attainments connected with dentistry.

A few words now to the infants, who have just been born into our ranks, and I will give all who are over-flowing with eloquence (as well as with the articles mentioned in our bill of fare), an opportunity to speak their pieces.

My very young brothers, perhaps there is no light that reveals to you in such glowing colors, the glorious future, as that of your own imagination.

Everything is depicted to you *couleur de rose*. You expect to meet every emergency, and triumphantly overcome every obstacle. The public will see in you the embodiment of all recent progress in our science, and rush to you for relief in time of trouble. Be ye not deceived; whilst the prospect of a bright future may beckon you on, it will be obtained only by patient, persistent waiting, well directed effort, and ample opportunity for study. Be not discouraged; for what man has done, man may do, and be assured that those of us, who have gone before, have only paved the old ways, and opened up new ones, that you may with greater facility, climb the "mountain," as is beautifully described in the following poem:

"I am stepping toward a mountain,
Rising in Life's glowing West.
Golden glory lights its summit;
Heavenly radiance seems its crest,
Shall I ever stand upon it
But to find its glory gone;
But to find a higher mountain
With the sunset farther on."

PROGRESS OF DENTAL EDUCATION.

BY OTTO ARNOLD, D.D.S., IRONTON, OHIO.

[Read before the Mississippi Valley Association of Dental Surgeons, Cincinnati, March 4, 1885.]

THE first subject on the programme ought to be of sufficient import to interest every practitioner and develop some suggestions based upon observations and facts, to stimulate a healthy sentiment for the perpetuity of everything that will strengthen and add to the usefulness of our calling.

From the earliest history of dentistry, men, eminent for their ability and strong in their solicitude for the future of our profession, have taken an active part on this question, and much wholesome and sound doctrine has emanated from this source; and if we were only more ready to refer to the sentiments, as expressed by these earnest workers for the good of our cause, and as set forth in many publications of the past, we would conclude there was very little more to say—even to-day. But as there is a demand for something new, so-called, I will endeavor to commit a few thoughts to paper, at the risk even, of reiterating much that is old—in sentiment at least. The subject would naturally suggest the query, Have we been progressive?

Yes! We have progressed continuously from the day the turnkey was the universal remedy for all dental troubles until to-day—the most delicately made and artistically finished forceps lie comparatively idle in our cabinets and teeth are saved rather than lost. From the day teeth were filled with lead and fusible alloys; when exposed pulps were never saved; until to-day we manipulate gold at will, and living pulps are rarely destroyed. From the time the origin and cause of dental caries were merely matters of conjecture—until to-day we have an intelligent classification of the destructive elements that enter into the various forms of dental decay, and we are in a measure able to arrest their progress. From the time dental colleges were unknown until now institutions are scattered throughout the land, with their well selected corps of instructors, affording abundant opportunity and the best facilities for instruction to all who may apply. Then again, our numerous societies and periodicals, none of which

is half a century old—furnish a source for information that is simply inestimable.

With all this fresh in our minds, all must admit that we have been progressive. But, notwithstanding this is true, I believe we are still too circumscribed, and that our field of usefulness must be enlarged. For fear of making what was intended to be a short paper, a long and tedious one, I'll be brief and to the point.

I have frequently been struck with the manifest indifference and limited knowledge among members of our calling, concerning the sciences of therapeutics and *materia medica*, and the art of prescribing. If we are to maintain our claim for professional independence, or as specialists of a learned profession, more progress must be made in this direction. No one will deny the importance and necessity for medication that many dental lesions demand. The first symptoms of dentition in the infant often call for the most urgent treatment; and the eruption of the *dens sapientia* is not wholly free from complications demanding judicious medical aid.

Are we not too often guilty of criminal negligence by a limited application of our services; ignoring remote complications, and utterly disregarding general medical principles? Are we not too willing the general physician have charge of everything beyond the mere manipulations that are almost exclusively mechanical, and quite limited as to territory involved? If we are not all full fledged medical men, we at least, must be dental physicians and surgeons; and in this way only, can we hope to elevate our calling to a still higher plane, and moreover, extend the usefulness of our profession.

We don't want to be general practitioners of medicine, in the fullest sense of the term; if we did, many of us would probably abandon dentistry; but there *is* a happy medium between extremes, and I assure you, a consultation between medical and dental practitioners often develops a most successful desideratum with the most beneficial results to all concerned. The coming dentist must either enlarge his field of usefulness, or suffer the odium of ostracism to any claim as a member of a learned profession.

Recently while reading a novel by a popular author, I was impressed by the following remarks, which are quite apropos to the subject under consideration.

"There is a class of common place intellects who regard knowledge of all kinds in the light of a ladder—one ladder for each science—and the rungs of the ladders are the successive facts mastered by an effort, and numbered in the order they have been passed.

"These persons think it is possible to attain to high eminence on one particular ladder—that is, in one particular science, without having been up any of the other ladders—that is, without a knowledge of other branches of science.

"This is the mind of the plodder, the patient man who climbs, step by step, in his own unvarying round of thought; not seeing that it is but the wheel of the treadmill over which he is laboring, and that though every step may pass, and repass, beneath his toiling feet, he can never obtain a bird's-eye view of what he is doing, because his eyes are continually fixed on the steps in front."

The application of the above can readily be appreciated, when we look about us and see the large number of dentists who are content to know nothing more of science and art than is absolutely necessary to perform commonplace operations limited to filling and making artificial teeth.

PROGRESS OF DENTAL EDUCATION.

BY A. BERRY, D.D.S., CINCINNATI.

[Read before the Mississippi Valley Association of Dental Surgeons Cincinnati, March 4, 1885.]

THE progress of dental education in recent times is highly gratifying. Although for centuries there have been members of the dental profession distinguished for their learning and skill, still within the memory of people now living the great majority of those practicing dentistry were men of little scientific attainments. To enter the profession, no liberal course of study, nor any standard of professional knowledge, was required; and no matter how ignorant any one might be, if he had the assurance to announce himself a dentist, he was accepted as such by the community. There was in the world no dental school, no dental society, no dental journal, no dental depot, and no legal enactment regulating the practice of dentistry.

In the early days dentists were isolated from each other.

There was little social or professional intercourse between them. Each kept his secrets, or imparted the knowledge of any improvement he made for a consideration.

In those times if the dental student resolved to obtain a professional education his path was beset with difficulties. For his tuition in anatomy, histology, physiology, pathology, therapeutics, and chemistry, he relied on the medical schools where the teaching had no reference to the practice of dentistry. To acquire professional skill he had recourse to a private preceptor, who, if he had the ability to properly prepare him for practice, could usually ill afford the time necessary for the purpose. Nor was it generally supposed that much time or study were necessary to learn all a dentist needed to know.

To reduce the chaotic state of the dental profession to order, and elevate it to the desired standard, was a difficult task, requiring the united energy of educational influence, associated effort, and the power of the press.

The colleges, associations, and journals, scattered all over our land, and existing also to some extent in the old world, for promoting the interests of the dental profession, are, like the common school, of American origin. Their founders were men of sound judgment. They laid their foundations deep. They builded well. The results of their labors are remarkable. After a half century of effort to elevate the dental profession of our country, it is abreast of the professions of law, medicine, and theology.

The agencies so successful heretofore are to be relied on for further improvement.

Our score of dental colleges, affording facilities vastly increased above any other means of obtaining a dental education, have proved a great boon to the profession. Let them all imitate the worthy example of a few and demand a good English education as a *sine qua non* for matriculating students. Let them receive only those of fair mental ability, and good moral character, affording ground to expect them to become proficient and honorable members of the profession. Let them extend their terms of about five months to a much longer period. Deducting one week for their classes to get well at their studies, two weeks for time spent or lost at Christmas holidays, and the last week of the term for examinations and preparation for commencement,

and there remains about eighteen weeks of each session for study. Attendance on two courses of lectures being required for graduation there are about thirty-six weeks devoted to college studies. It is not to be expected that any considerable proportion of the students will occupy much time in scientific researches during the vacations. That thirty-six weeks at college is too short a period for the dental student to become so well advanced in attainments as is desirable before engaging in practice, is clearly evident to any one at all informed on the subject. While no diploma should be conferred unless an examination shows the candidate to be well prepared, it would be eminently proper for the colleges to adopt a rule to graduate those whose acquirements warrant it after attending one session.

The numerous dental societies promote fraternal feeling among their members, and aid largely in the diffusion of knowledge, by their essays, discussions and clinics. Care should be had that the code of ethics is rigidly enforced, and the time of their sessions fully utilized by closely following their programmes, and avoiding waste of time on unimportant matters.

The score of dental journals published in our country, comparing favorably with those in any other branch of science, contribute largely to the information of their readers, and stimulate them to attempt higher attainments. Let increased care be had in editing the journals. Let their writers generally furnish articles more carefully written and less verbose.

When there were no dental depots, instrument makers were few and far between. The only dental appliances kept for sale were the key and forceps, poorly adapted to hold any tooth. A dentist who passed away a few months ago said, that when about to commence practice, he made the journey from the northern part of Ohio to this city to procure instruments. Arranging with a cutler, who is still making dental instruments here, he waited two weeks until his goods could be manufactured. The dental depots greatly benefit the profession, supplying every thing needed at once, and drawing the attention of their patrons to improved appliances and their uses.

Legislative enactments regulating the practice of dentistry have given an impetus to dental education inducing a large number of students to avail themselves of the advantages of dental colleges. Some of these laws should be made more stringent, and strictly enforced.

PROGRESS OF DENTAL EDUCATION.

DISCUSSION.

DR. A. BERRY, Cincinnati: I was especially interested in that part of Dr. Arnold's paper referring to want of care in making examinations. Harm is often done too by the thoughtless remarks made by dentists to patients. The other day, when about to use a file on a tooth, a patient said to me, "Dr. So and So told me it would ruin a tooth to file it on the side," and he had said this without explanation or giving a reason.

DR. F. W. SAGE, Cincinnati: It has seemed to me for some time that the dental profession has not lived up to its privileges. We should know enough of medicine at least to be able to diagnose a case even that we do not expect to treat. If a physician comes to us with a patient for consultation, we must show that we understand something about medicine and the general diseases of the system, in order to command his respect.

How many can recognize, at sight, tumors of the mouth or jaws; tell whether benign or malignant, etc., and exostosis of the bones of the face and jaws; enlargement of the nerve trunks and filaments, or such other lesions as may be present for treatment. Our education is incomplete unless we understand these things. We should also be able to at least partially diagnose reflex disorders.

I am not one of those who believe this should be an age of universal scholars. The tendency in America of enterprise in the sciences is in the direction of money getting or business. In this country scholars are bound down by a lack of means and are obliged to struggle for existence while making researches. In Europe it is different. The country is older and they have more money.

DR. OTTO ARNOLD, Ironton: The object of the paper was to stimulate discussion.

It isn't necessary that we should treat these diseases but we should be able to give the patient an intelligible account of the case.

Oculists are specialists as we are, but they base their practice on medicine.

The literature of our profession is abundant and we need not go outside of the profession to become thoroughly familiar with the subject.

DR. R. J. PORRE, Cincinnati: [After reading a paper on the subject, related several cases of pyæmia that came under his observation, one being that of Gen. McDonald of St. Louis, who suffered intensely from a multitude of boils.] He had been treated by many eminent physicians without getting relief. Some insisted that they were of syphilitic origin, although the patient declared he never had syphilis. They failed to recognize the pathognomonic character of the disease; syphilis has no furuncular sores.

He came to the office one day seeking relief from a pain in his jaw. The paroxysms always started in that way and he knew another crop of boils was at hand. He had called the attention of his physicians to the preliminary pains in the jaws, but it was always attributed to neuralgia, and he was told the teeth were not the cause. Upon examination found a lower third molar that had been absorbed out of its socket. It was floating in pus, and on pushing the tooth with an instrument, a quantity of sanious fluid gushed out. Removed the tooth and he began to improve, although it did not prevent that visitation of boils. In a few months he was well and has not been afflicted since.

PROF. J. TAFT, Cincinnati: Almost every one has an opinion on the subject and there are and have been quite a diversity of opinions. Some reaching out to cover the whole field of literature and science, and others content to have it within circumscribed limits; but the day is not far away when there will be quite uniform thought on the subject.

To understand how far we have progressed and also, to overcome the difficulties before us we must make a retrospect.

In the early days of the profession the Parmlys, Harris, Hayden and others, were almost a unit in regard to what should be done. Later on, Rogers, Cook, Taylor, Peebles, Brown, Clark and others occupied what would now be regarded as a quite advanced position on this question.

Thirty or forty years ago men began to come into the profession at a rapid rate, and education did not keep pace with the

increase. Harris, Hayden and others started the Baltimore College of Dental Surgery, and Taylor, Cook and others the Ohio College.

They organized the first association in this country, the American Society of Dental Surgeons. They took a high stand in that society—none higher has been taken since. One idea was that a good preliminary education was a necessity to a successful dentist. The idea lost ground, relatively, from 1840-45 on, when such rapid increase in numbers was made. Now a change for the better is taking place through the higher position taken by our literature and thinkers. Also by the estimation in which the profession is now held. Formerly, mere tinkers like clock menders and kettle repairers, came into the profession without question. There is a growing demand on the part of the public as well as of the profession for a higher standard. The reputable dentist should be a man of good general attainments—the ignoramus does not occupy a very enviable position. There is a great diversity of opinion as to the degree of requirements, while a man cannot (as Dr. Sage intimated he should) travel all over the field of literature and science, yet we should acquire all we can, according to the capacity of the individual; gather in as much as possible of a knowledge of things outside the profession.

There is no special point to which you can bring all men in dental education. We forget that men vary in capacity—some hold a pint, some a gallon. Recognize it, and have the student recognize it. The more knowledge, the more strength and power and influence over those about him. The strong always has the advantage of the weak. The man with the most attainments, mental and physical strength, or money, has the most power. A student with a knowledge of the languages, when he sees a name, for instance in anatomy, understanding the original, gets an idea of the meaning that he could not otherwise get and it is easier for him to remember than one who has no knowledge of the original languages.

Study in the line to which you are best adapted. The man who well adapts artificial teeth to the mouth, should receive the same recognition as the surgeon or the medical practitioner. A man will struggle along against his will and wear himself out, without accomplishing anything, by not sticking to what he is adapted to.

DR. A. O. RAWLS, Lexington, Ky.: Am satisfied with the progress of dental science ; proud that I am a member of a profession that has made such rapid strides from her original status, and feel more pride in being a member of a dental association than any other, if I had my choice. The progress of dental education has not only been rapid but has gone ahead of any other profession in the land and to-day stands at the top of the list, including, medicine, literature, science, art, etc.

I have only to mention the difference between the pain people suffered twenty years ago and to-day, and what changed it? Dentistry! Did our dental splints and appliances for supplying the wants of defective jaws, etc., come from medicine, surgery or art? from dentistry.

We are too apt to take the standard of dental colleges as the standard of dental education and as all-sufficient, but it is not.

Prof. Taft stands at the head of one of the best institutions and where any one may obtain all necessary education, and yet he can send out students who could not exist in some parts of the country—the swamp lands of the south, or the wilds of the far west—because they would not be appreciated by the ignorant classes. One of our duties is the education of our surroundings.

DR. H. J. MCKELLOPS, St. Louis, Mo.: I did not expect to say one word, but when I came into this, the oldest and best dental association in the world, that any man might be proud of membership in, and hear that dentistry must become a specialty of medicine, I cannot keep still. I differ with every one on this floor that has read or spoken on this subject, and especially the paper read by Dr. Porre. We must remain a distinct profession or go to pieces.

The fact of a man graduating at a school an M. D. does not make him a better dentist. Can that man diagnose a case any better than a D. D. S? Where would surgery be but for John Hunter, who brought it up from the barber shop? Did he take any man's word for anything? No, he studied and investigated for himself. Look at the M.D's who have come into our profession. How much light have they shed on it? None.

To the young and old men I say study and investigate. I call myself an old man. In 1840 I was a messenger boy in Ohio until I made enough money to get an education, and forty years ago learned mechanical dentistry. Dr. Patrick of Belleville, Illi-

nois, was then a diamond setter. Study has made him one of the foremost men in the profession.

When I attended the International Medical Congress, in London, I felt disgraced. To gain admission we had to put down our name as "Doctor."

The oculist and the aurist, etc., are specialists of medicine, they belong there, but we do not, and don't need it. After a man is forty I believe his time is past for learning.

If a young man thinks only of putting in an amalgam plug, and making a living, let him stay there, but those with ambition—let them shine.

Read and digest the life of John Hunter. You will find that this brain of ours isn't simply to make dollars and cents. If I didn't love my profession, instead of traveling from association to association, I would stay at home and put in a little amalgam to earn bread for my family.

Of course improve the schools—the better the school the better the education you get. One student is a laggard, another a medalist, yet the laggard may come to the front. The clinic is the proper place to educate the young men. Get the best men at remunerative compensation—what we want is more instruction in the operating room.

DR. F. W. SAGE, Cincinnati: I once tried to make the acquaintance of our distinguished visitor (Dr. McKellops), when in St. Louis, but was met at the door by a young lady, who asked me if I wished to see the Dr. on professional business. Of course I did not and left without seeing him.

DR. MCKELLOPS: I wish to say that if Dr. Sage had made himself known, he would have been welcomed, and to all my professional brethren the latch string is out and they are welcome to a place beside me at the chair. I think I have as exclusive a practice as any man and I have never had a patient refuse permission to me to bring a fellow dentist into the operating room.

DR. SAGE: I did not intend any reflection on Dr. McKellops. I am not opposed to a liberal education but to a smattering of everything—what we lack is concentration. This is an age that requires a man to remain ignorant of many things that he may progress in one.

I have no sympathy with the idea that the dentist must possess a classical education, but we should endeavor to stimulate

young men in the study of anything that will advance them in their profession. I am utterly opposed to the sentiment that would tack the dental on to the tail of the medical profession.

Is it not from a feeling of a lack of something ; that we are circumscribed and have no sufficient literature ? We are mostly mechanics and serve our patrons in that way and should be prepared to do it in the best possible manner.

DR. McKELLOPS : Ours is the coming profession—the electric light. The field of dental education is a broad one, and our most distinguished men are in it. We didn't bring them from across the ocean but educated them here. This profession didn't come from Europe ; Germany, England or any other country on earth but our own. Germany may be ahead of us in theory but not in practice. What is there in foreign journals but a repetition of our own. To write, a man must read and study, and I want to see more of them, for they are few. If you sit down and think of nothing, you are gone.

DR. A. BERRY : Think Dr. McKellops is about right in his ideas. The average dentist when he has graduated from college feels satisfied that he has learned it all. He is inclined to belazy—they are all lazy naturally and habitually. There isn't much professional study or reading done by him. He spends his nights with friends in various amusements, etc., instead of adding to his store of knowledge as he should.

DR. SAGE. When I entered the profession, fifteen years ago, I was disappointed because there were so few men in it that were liberally educated. It was the intolerance and enthusiasm of youth, (I was then a boy), and was converted by a speech made by Dr. McKellops in this room, as President of this Association.

PROF. TAFT : It seems to me that this discussion has been a little wild. No one has advocated such a general education as to take in the whole field of science. The colleges are restricted in the advance they can make at any given time. If they go far beyond the point reached by the profession they are suddenly brought to a halt. As the profession becomes elevated and will sustain the colleges, the colleges will advance. It would be entirely useless to say a man must have A. B. or any other title to permit him to enter this college—the halls would be empty. The Association of Dental Colleges, formed during the past year have made recommendations looking to unity of action among

the colleges. It shows that definite progress has been made rather than any high standard attained. Students will understand that they must come prepared when they apply for entry into a college. The old is passing away in response to the public and professional demands. I don't like to hear Dr. McKellops called a distinguished "visitor." He is and has been a distinguished *member* for lo! these many years—maybe when Dr. Sage was in embryo.

DR. McKELLOPS: The particular point of failure in our dental colleges is that the fees received by the demonstrator of operative dentistry are not sufficient to allow him to give proper time to the instruction of the students. What we want is men to give instruction in one particular thing and nothing else. The teachers should be paid enough to allow them to give their whole time to it and enough to induce the best men to undertake it. It is in the clinics that the young men should be taught.

DR. A. G. ROSE, Cincinnati: I want to say a word for the much-abused young man, who is hounded down in every dental association in the land. They *are* well educated and they perform *good* operations, and if our professional ancestor, Dr. John Hunter, should come back to life and step into the office of that young man (and he'll be young for twenty-five years yet) Frank Hunter, have his molars illuminated by the electric light and hear him (Frank) expatiate upon the pulp and periosteum, etc., he'd think some progress had been made. [Applause.]

DR. J. M. CLYDE, Covington, Ky.: There is no question but that a full literary education is necessary. If a student enters the profession without it, the fault is with the preceptor. I know many who came into the profession when I did that could not write their own names. We have now advanced to where we should endeavor to make better history and make it in advance of any profession in the land. We have reached a point where we can be educators of medical men. Let a man have for a foundation a knowledge of medicine and he will be better prepared to practice his profession, or specialty, of dentistry. The signs of the times are that we are drifting in that direction when students themselves will desire the advantages afforded by the additional culture.

DR. JAMES LESLIE, Cincinnati: This desire of dentists for recognition by the medical profession strikes me as very singular,

and it is an American idea. The profession in Europe doesn't ask for it or want it. The "preliminary" in Great Britain is very different from that in this country. An examination in Latin and Greek is necessary before admission to the dental hospital school.

DR. GEORGE W. KEELY, Oxford, Ohio: There is no dental college in the land that the teachers can depend on the salaries for sustenance. There are twenty dental schools in the United States. If we could consolidate and endow them, a man could then be paid enough to afford to give his best efforts and entire time to the instruction of the students.

Compilations.

"Gather up the Fragments."

IS DENTISTRY A DISTINCT PROFESSION?

THE discussion on the retention of dead teeth in the jaws in these columns has elicited inquiries as to what constitutes "dentistry;" and inasmuch as efforts are being made to improve the means for dental instruction, the subject has an interest for medical men. We learn from Dunglison that a dentist is "one who devotes himself to the study of diseases of the teeth and their treatment." They have also received the designation of dental surgeon, and surgeon-dentist. The work of the earlier dentists was confined mostly to tooth-drawing, the stopping of cavities in teeth, and the application of false teeth. Their ranks were recruited from among skilled artisans, notably goldsmiths, sources from which many continue to come. For the past quarter of a century dentists have been organizing themselves into associations, and some twenty "dental colleges" have come into existence. From the brotherhood of these associations soon came into existence the so-called "dental profession." In the meantime there has been now and then an accession to their ranks of men possessing more or less knowledge of diseases of the mouth, who have attempted to raise the business of dentistry to the dignity of oral surgery. It will thus be seen that the "dental profession" is constituted of two distinct elements, a mechanical and a

medical. Now it may be said of the former that in the public mind they are by courtesy a "profession" much in the same sense that barbers are, since the one cannot display greater zeal in recommending his hair invigorator to patrons in his chair than does the other in respect to his dentifrice. But it is otherwise with the medical men who have espoused dentistry, and who, while reaping the harvest of profit that comes from dental ornature, as well as from surgical treatment of the mouth, desire to dignify their avocation with the title of "Oral Surgeon." Just here we will venture to offer a word of counsel to those whose inclinations lead them to the practice of oral surgery, some of whom seem anxious to elevate the standing of all dentists to their own; it is this, the attempt to educate persons at the outset as dentists in commencing the work at the wrong place. A specialist in medicine cannot thus be made; there is no short cut for the oral surgeon any more than there is for the ophthalmologist or the gynecologist.

We by no means desire to be understood as opposed to any real advance in any departments of medicine, and, therefore, shall welcome all laudable efforts made in this direction, which, of course, includes oral surgery; and we trust that opportunities may not long be wanting for those whose tastes or interests induce them to take up this specialty after acquiring a medical education. The "dental college," which we believe is peculiarly an American institution, and an outgrowth of a desire to promote the interests of the "dental profession," cannot in its present state do more than instruct the student in a most superficial way as regards medicine, but it may give him special knowledge, and we would suggest that its work should be confined to this. The instruction might include all that would be of service to the metallist both in respect to chemistry and smith-craft. In this way could much be done to prevent the introduction of harmful metals into the mouth in the way of plates or fillings, and the application of ill-fitting plates and other appliances.

The attempt to educate men as oral surgeons, and confer a degree upon them as such in a college, would be as absurd as the exclusive education of an ophthalmologist in an "Ophthalmological College." It is a mistake to suppose that oral surgeons constitute a "profession" any more than do laryngologists or gynecologists in medicine, or patent or criminal lawyers in the law.

An oral surgeon must first learn the medical art, just the same as if he were going to practice on any other region of the body.

As regards the making of plates for false teeth or other mechanical work, the oral surgeon may certainly do this, as physicians and surgeons may dispense their own medicine and make their own surgical appliances, since these are all matters concerning each individual's taste or skill.

And while we are on this topic, if the truth must be said, it is high time that all specialism in medicine, inclusive of oral surgery, should have some limitation, since there is a growing tendency toward making all of them "professions," with the consequent practice of greatly overdoing local treatment; this seems specially imminent where the public has become unduly "educated" up to the importance of the local treatment of disease of special organs.

There is another feature of this question which should interest physicians; laws are being enacted in nearly all of the States which to a greater or less extent limit the practice of oral surgery, or dental surgery as it is sometimes called, to the graduates of dental colleges, thus practically throwing the treatment of an important region of the body into the hands of men who, in most instances, have not a sufficient medical education. Physicians are themselves much to be blamed for this state of things, since they have long been in the habit of relegating the treatment of diseases of the mouth to the "dental profession." Should the various specialists finally resort to this kind of trades-union protection, there will soon be no further use for the general practitioner.—EDITORIAL in *The Medical Record*.

CONCERNING BILLS.

BY S. H. GUILFORD, A.M., D.D.S.

THE question of fees; how they should be estimated; upon what based; and their relative figure, has received a fair share of attention from dental writers in the journals, but the question of how and when bills should be presented and collected seems to have been overlooked.

The matter of presenting and collecting bills is a very

important, and in some cases almost a vital one, to those beginning practice. It is well enough to earn the fee and enter it upon our books, but it does us no good until it is converted into cash in hand.

Let us consider how we should make out our bills; when to present them; and how collect them in cases of delay or neglect. Various customs prevail in regard to these matters, but there is no uniformity. Some use bill-heads with a cut of the teeth printed thereon, and not only itemize each operation, but mark the same on the chart with corresponding numbers. Others have less pretentious bill-heads and manage to condense their account into four or five lines, even though several members of a family have been served. A few follow the practice of some physicians and mention no items, but simply record "professional seavices," and mark opposite the sum total.

The first is open to the objection that the illustrated bill-head is neither ornamental nor in good taste, while the itemizing of operations entails a vast amount of unnecessary labor upon the dentist. Patients, especially the head of the family who pays the bill, but who has possibly not been operated for, very naturally may want to know something of what has been done, but he rarely wishes or cares for the individual items of the account.

This plan, therefore, does not seem to be the best. The second one appears to be better, as the account is more easily made out, and is sufficiently explicit to answer all ordinary wishes. Should the one to whom the account is sent, wish an account with items, he can ask for it and it will be gladly sent. This would probably not occur once a year.

The third plan is a good one for those who can introduce it, and get their patients accustomed to it, for it entails the least labor of any; but, inasmuch as it leaves the patient in entire ignorance of what has been done, and opens the way for possible dishonesty, it requires for its success a wonderful amount of confidence on the part of the patient, in the conscientiousness of the dentist.

When should bills be rendered? The old time country physician was accustomed to send no bills, and to render them only when asked for, for fear of offending the patients. In this way bills ran along endlessly in many cases, many were disposed of only by the statute of limitation, while fully one-half were never

collected at all. The city physician of to-day is accustomed to render his bills semi-annually, in January and July, and if not paid within a reasonable time they are turned over to a *collector*.

Many dentists follow this plan and send their accounts semi-annually, but while it may answer for those who have been in practice many years and have laid by something, it is a long time for the beginner to wait, especially as he has paid for his material in advance. There is no good reason why either physician or dentist should wait six months for his pay (and longer, when not promptly paid). When the merchant allows a credit of thirty or sixty days, he is accounted liberal. Why then should a professional man wait longer? In truth, a bill should be paid as soon as possible after the service is rendered. The mechanic or artisan loses no time in presenting us with his bill after the work is completed.

A plan that prevails with some dentists, and it is certainly a good one, is to have a foot-note printed on the bill-head stating that "bills will be presented the first of the month following the completion of the operation." Patients will thus see that it is a custom with you, and you can feel at perfect liberty to send the bill on the first of the month if you wish to, or if you need the money. There is nothing unreasonable in it, as they will see, and they will not object. We can train or accustom our patients to any reasonable practice on our part, if we but set about to do it.

The young beginner especially, needs his money as soon as he can get it, and there is no reason why he should not have it soon.

He need not send all bills each month, for this would not be expedient in the case of a patient with whom he has not finished, or with families where there is nearly always some member under his care at the time, but all completed bills should be sent at the beginning of the month. With regular families, bills sent twice a year will be sufficient, and at such times a clean sweep of the ledger should be made and all bills rendered except those that are uncompleted.

All bills not paid within a month or two should be sent again, and if not paid then should be followed by a note requesting payment, and state that it is your custom to have bills paid promptly. There need be no fear of offending by such a course, for a reasonable person will see that you are in the right, and

either pay you or call or write to explain why the bill has not been paid. Possibly he may ask a little extension of time, which will usually be granted.

The unreasonable person may become offended by such a course, but if he is, get his money and let him go, if he wishes to. You will be better off without him. Better have a small, reliable and prompt paying practice, than a much larger one that is constantly annoying you.

If your bills and note bring no response, put the bill into the hands of a faithful collector, and let him try his hand. If he does not succeed, ascertain whether your client is the possessor of unencumbered real estate. If he is, and the bill be less than one hundred dollars, enter suit against him before a magistrate. The only witness you will need to prove your case, will be your "book of original entry" or ledger. If the magistrate be fair minded and intelligent, you will gain your case and receive "judgment." The sheriff will press your judgment and collect the bill, or levy upon and sell the debtor's real estate to satisfy the claim.

If, for any reason, the judgment cannot be satisfied at once, it remains in force, in this state [Pennsylvania], for seventeen years, hanging over the debtor's head like the "sword of Damocles." Such summary proceedings will, fortunately, seldom be necessary, but when necessary, they should be resorted to without fear or delay. There is a class of persons who make it their business to swindle all with whom they deal, be they dentist, physician or tailor. They should in all cases be summarily dealt with.

In order to avoid this class as much as possible, all new and unknown patients should be asked for a reference, and then have their standing and character well inquired into during the time that intervenes before their first appointment falls due. Better inquire into their standing before the work is done, than afterward.

It should be made a rule of practice with a professional man, as it is with the merchant, to keep one's accounts collected up as closely as possible. They will usually be paid more willingly by the patient while the matter is fresh in his mind.

In order to insure prompt payment, a practice prevails with a few, of offering a certain discount for cash. This is all wrong, and should be discountenanced. Patients should be given to

understand that bills are due when rendered, and if any considerable delay occurs in the payment, we should rather add interest than allow a discount.

Charges for services should be made fairly and equitably, and full payment insisted upon, except where, as an act of charity, it seems proper to make a reduction. To make a reduction in cases where patients are well able to pay, but where they claim that the bill is too high, is bad practice. Experience has shown that when a reduction is made to please them or retain their patronage, we fail of our purpose. When they intimate that unless a reduction is made they will be obliged to leave you, they will be just as likely to do so when the reduction is made as when it is not.—*Dental Practitioner*.

Correspondence.

"I charge you that this epistle be read."

THE ROBINSON REMEDY.

EDITOR OF JOURNAL:—The little song begins with "Dare to do right, dare to be true." But that is not what your correspondent of Dec. 15, 1884, did when he went to experimenting with the Robinson Remedy, by eating a hole through poor pussy's ear instead of trying to cure his very bad case of (Riggs) disease. Now we who have known Dr. Robinson for at least twenty-five years, know that he would not perpetrate a joke upon the profession, by introducing the combination, now and hereafter to be known as the Robinson Remedy, if it was in the least degree a humbug.

At dinner one day not long ago, my little granddaughter when asked if she would be helped to certain things upon the table, put her little hand up beside her face closing all but the index finger and making that one very conspicuous, with any amount of fun beaming from her face, exclaimed, the idea! And that is just about how I felt if I did not look like it when I read the inquiry or correspondence of Dec. 15, 1884. But enough, and pardon me for the above digression. Dr. Robinson tells us he has given very much thought to the treating of sensi-

tive dentine, and the disease now known as pyorrhœa alveolaris. He has given us a remedy and a good one, yes the best one I have ever used for sensitive dentine. I have used this remedy ever since it was given us through the journals. My first trial was its application to a very badly decayed tooth, and very sensitive to the touch. I had already applied the rubber dam and had to leave my patient in this condition while I went to the druggist to have the materials compounded. This was accomplished as soon as possible and I had a *salifiable base*, from 30 grains of caustic potash and 30 drops of 95 per cent. solution of carbolic acid. The patient was informed the remedy would cause some pain but it would soon subside. Watching its effects closely I soon began with a rapid excavator to remove the diseased dentine, each cut of the instrument exposed a new surface to the action of the remedy and after a short time I had the cavity prepared for filling and with scarcely any pain to my patient. I was not surprised at all, for Uncle *Jerry* said it would do it, and it did. I have continued to use the remedy ever since and with uniform success: as a dressing for exposed pulps in several cases; three in one month, two were slight exposures and not wounded. These I treated in the same manner as sensitive dentine, cavity made dry and pulps covered with oxy-phosphate enough to resist the pressure of the introduction of gold as a filling. These are doing well, teeth not more sensitive than any others. The other case was a very bad exposure in two places; I used the remedy freely and proceeded as above to protect pulp from pressure. This tooth, though badly decayed and with this exposure, is doing well, no trouble. Operation performed during the holidays. I have had two failures, outright ones too. These patients were very nervous and constantly excited, it was impossible to control them and I was obliged to change treatment in order that I might save these teeth a little longer.

As to the treatment of pyorrhœa alveolaris my experience has not been very extended, yet I have had enough to do with it to convince me, it is the remedy.

The remedy at first, and when applied to the cavity of decay, is a dry powder, but the natural heat of the tooth soon causes it to change into a cream or semi-fluid, thus enabling it to penetrate the tubuli.

If I have given any light in the above for our — brother,

and any encouragement for others, I shall be glad. And right here, I am reminded of the country boy who came in to have a tooth extracted. After the operation was performed he looked at me so *honestly* and exclaimed: "*Is it out?*" I told him, "Yes." "Well, I am glad;" and away he went. I believe the time is coming when we will be enabled to fill a tooth without pain, by obtunding the sensibility of the dentine.

C. H. HARROUN.

THE EXTRACTION OF ROOTS.

EDITOR JOURNAL:—I cannot conceive of any emergencies that would warrant the extraction of two good canine roots, as reported by A. J. Grosvenor in your February issue. If all such forceps cannot be sunk in the depths of the sea, I would like to see the old Mosaic law enforced, "An eye for an eye and a tooth for a tooth," and then dentists would be a little more thoughtful about the kind of material they were consigning "to the bone mill."

M.

Editor's Specials.

"Write the Vision and make it plain."

TO OUR CORRESPONDENTS.

For some time past our private correspondence has been totally neglected. It was not our wish to have it so. We ask forgiveness, but do not tell our correspondents to "have patience," as that might imply answers in the future, while it is not possible to answer many of the letters received, after such a lapse of time, and it is probable that others will remain unanswered, because the necessary strength cannot be spared from other duties.

A DOUBTFUL TERM.

In reference to the "Robinson Remedy," the venerable and talented inventor speaks of the ingredients forming a "salifiable

base" as they combine, others, we think, have used the same term. It strikes us as not well chosen. Let us illustrate: Salt-petre is a combination of nitric acid with potash. Potash is the *base*, and as by its combination with an acid a salt is formed, potash is correctly called a *salifiable* base. Not all the oxides will unite with acids to form salts. Such as will not are not salifiable bases. Common copperas is composed of sulphuric acid united with the protoxide of iron, with the addition of water of crystallization. Hence protoxide of iron is a salifiable base. We know that carbolic acid will combine with caustic soda, and we presume, if properly manipulated, it will with caustic potash. If such combination takes place the result is a *salt*, the carbolate of potash, in the older style, but the boys, perhaps, prefer *potassium carbolate*.

NOT A FUNERAL.

IN the JOURNAL for December, 1884, we noticed, as we supposed, the demise of the *New England Journal of Dentistry*. We were misled by one who professed to know the facts. He spoke of its editors and publishers having labored for no reward except that resulting from "satisfied consciences," while at the same time, instead of receiving sympathy and encouragement from their cotemporaries, they had been maltreated — "hawked by mousing owls," or something of that kind, while the truth is, as we learn officially, its conductors found that they had too much work, and preferred selling the *Journal* to sacrificing their practice. We are glad to be able to state that the enterprise was a financial success, and that a good price in currency was received in selling. If a blue-eyed girl or a blue covered periodical marries a well-to-do widower, no one need be sad.

KANSAS DENTAL LAW.

THE following text of the law, recently enacted by the Kansas Legislature, was sent us by Dr. A. H. Thompson, of Topeka:

AN ACT TO REGULATE THE PRACTICE OF DENTISTRY, AND PUNISH VIOLATORS THEREOF.

SECTION 1. It shall be unlawful for any one to practice or

attempt to practice dentistry or dental surgery in the state of Kansas, without first having received a diploma from the faculty of some reputable dental college, school, or university department, duly authorized by the laws of this state or some other of the United States, or by the laws of some foreign government, and in which college, school, or university department, there was at the time of the issuance of such diploma, annually delivered a full course of lectures and instructions in dentistry or dental surgery : *Provided*, That nothing in section 1 of this act shall apply to any person engaged in the practice of dentistry or dental surgery in this State at the time of the passage of this act, except as hereinafter provided : *And provided further*, That nothing in this act shall be so construed as to prevent physicians, surgeons or others from extracting teeth.

SEC. 2. A Board of Examiners, consisting of four practicing dentists, residents of this State, is hereby created, who shall have authority to issue certificates to persons in the practice of dentistry or dental surgery in the State at the time of the passage of this act, and also to decide upon the validity of such diplomas as may be subsequently presented for registration, as hereinafter provided.

SEC. 3. The members of said Board shall be appointed by the Governor, and shall serve for a term of four years, excepting that the members of the Board first appointed shall hold their offices as follows : Two for two and two for four years respectively, and until their successors are duly appointed. In case of vacancy occurring in said Board, such vacancy shall be filled by appointment by the Governor.

SEC. 4. Said Board shall keep a record, in which shall be registered the names and residence or place of business of all persons authorized under this act to practice dentistry or dental surgery in this State. It shall elect one of its members President, and one Secretary thereof, and it shall meet at least once in each year, and as much oftener, and at such times and places, as it may deem necessary. A majority of the members of said Board shall constitute a quorum, and the proceedings thereof shall be at all times open for public inspection.

SEC. 5. Every person engaged in the practice of dentistry or dental surgery within this State at the time of the passage of this act, shall within six months thereafter cause his or her name and residence and place of business to be registered with said Board

of Examiners, upon which said Board shall issue to such person a certificate duly signed by a majority of the members of said Board, and which certificate shall entitle the person to whom it is issued to all the rights and privileges set forth in section one of this act.

SEC. 6. Any person desiring to commence the practice of dentistry or dental surgery within this State after the passage of this act, shall, before commencing such practice, file for record in a book kept for such purpose, with said Board of Examiners, his or her diploma, or a duly authenticated copy thereof, the validity of which said Board shall have power to determine. If accepted, said Board shall issue to the person holding such diploma a certificate duly signed by all or a majority of the members of said Board, and which certificate shall entitle the person to whom it is issued to all the rights and privileges set forth in section one of this act.

SEC. 7. To provide for the proper and effective enforcement of this act, said Board of Examiners shall be entitled to the following fees, to wit: For each certificate issued to persons engaged in practice in this State at the time of the passage of this act, the sum of three dollars. For each certificate issued to persons not engaged in the practice of dentistry in this State at the time of the passage of this act, the sum of ten dollars.

SEC. 8. The members of said Board shall each receive the compensation of five dollars per day for each day actually engaged in the duties of their office, which, together with all other legitimate expenses incurred in the performance of such duties, shall be paid from fees received by the Board under the provisions of this act, and no part of the expenses of said Board shall at any time be paid out of the State treasury. All moneys in excess of said *per diem* allowance, and other expenses, shall be held by the Secretary of said Board as a special fund for meeting the expenses of said Board, he giving such bond as the Board shall from time to time direct, and such Board shall make an annual report of its proceedings to the Governor by the fifteenth day of December of each year, together with an account of all moneys received and disbursed by them in pursuance of this act.

SEC. 9. Any person who shall violate this act by practicing or attempting to practice dentistry within the State without first complying with the provisions of this act, shall be deemed guilty

of a misdemeanor, and upon conviction thereof, shall be fined in a sum not less than ten dollars nor more than one hundred dollars.

SEC. 10. This act shall take effect and be in force from and after publication in the statutes.

Dental Schools.

OHIO COLLEGE OF DENTAL SURGERY.

THE thirty-ninth annual commencement was held in College Hall, Cincinnati, Wednesday, March 4, 1885.

Twenty-six received the degree of Doctor of Dental Surgery, Matriculates sixty.

G. F. Ambrose, Illinois; Walter L. Conkey, Wisconsin; Charles Clark, Ohio; John S. Chance, Ohio; John W. Cosford, Michigan; Albert Doerler, Ohio; William Robert Edgar, Ohio; Harry H. Genslinger, Ohio; Charles P. Gray, Ohio; Edward R. Hoff, Ohio; C. R. Holt, Oregon; W. P. Jackson, Ohio; Frank L. King, Pennsylvania; Harry M. Kempton, Ohio; J. Fred. Kruger, Ohio; George M. Kinsey, Indiana; Carrie Lloyd, Indiana; Louis G. Meyer, Ohio; James D. Moore, Ohio; J. E. Morton, Indiana; Ben. W. McPhee, Colorado; Adelbert T. Olmsted, Illinois; Homer W. Pitner, Illinois; A. W. Paffenbarger, Ohio; William M. Seeger, Wisconsin; Jerome B. Williams, Wisconsin.

Three prizes were awarded:

First to Miss Lloyd for best general examination, a gold medal; second to Walter L. Conkey, a dental engine; third to James D. Moore, a dental lathe.

DEPARTMENT OF DENTISTRY VANDERBILT UNIVERSITY.

THE Sixth annual commencement took place at University Chapel, Wednesday February 25th, 1885.

Fifty-five matriculates, twenty-five graduates. The *ad eundem* degree was conferred upon J. S. Franklin, M. D., D. D. S., Nashville, Tenn. The graduates are as follows:

Charles F. Barham, Arkansas; George C. Coöper, M. E., M.

D., England; Jonathan A. Ellord, Alabama; John W. Fambrough, Georgia; Frank H. Field, Georgia; Jas. A. Frazier, Alabama; F. W. Gradolph, Ohio; David R. Garrison, Texas; Edwin L. Hayes, Kentucky; W. H. Hogshead, California; Robert H. McNair, Mississippi; William C. Naff, Tennessee; Clarence V. Rosser, Georgia; Joseph W. Peete, Florida; Jesse W. Shoemaker, Alabama; George W. Slaughter, Alabama; Lawrence A. Smith, Mississippi; Geo. W. Stokes, South Carolina; John T. Taylor, Tennessee; Tyra F. Tynes, Mississippi; Pinkney L. Weakley, South Carolina; Thomas C. West, Mississippi; Lucius D. Wright, Tennessee; Sheridan A. Williams, South Carolina; John Wood, L. D. S., R. C. S., (Edinburg and Ireland), Scotland.

DENTAL DEPARTMENT OF THE UNIVERSITY OF TENNESSEE.

GRADUATES 1885 :—S. Dickson, Tennessee; J. M. Glenn, Tennessee; H. B. Harrell, Georgia; R. S. Griggs, Georgia; G. W. Dodson, Tennessee; M. M. Puckett, Georgia; M. E. Shelton, Missouri; John A. Lee, Tennessee; A. Y. Cartwright, South Carolina; T. S. Cartwright, Kentucky; J. F. Johnston, Louisiana; Henry D. Harper, North Carolina; S. B. Anderson, Tennessee.

PHILADELPHIA DENTAL COLLEGE.

TWENTY-SECOND annual commencement February 28, 1885, at Academy of Music, Philadelphia.

Matriculates 129, Preliminary readers 98, Graduates 58, as follows:

George H. Adair, New York; A. S. Bailey, Massachusetts; William Baylor, New York; Noah S. Borneman, Pennsylvania; Edward H. Buckland, Massachusetts; C. J. Cameron, Pennsylvania; Leopold A. Carter, Australia; J. E. Cartland, North Carolina; William G. Chase, Delaware; Ernest Cohen, Germany; George Eadie, Canada; George F. English, New Jersey; Mary E. Fetherolf, Pennsylvania; H. A. Fynn, New York; Isaac A. Goldsmith, South Carolina; Harry P. Griffith, Pennsylvania; William B. Griswold, Connecticut; Henry J. Harwood, France;

Franklin L. Henry, Ontario, C. W.; Burton E. Hoover, Pennsylvania; Robert Sutcliffe Ivy, England; A. W. Jamison, Pennsylvania; Victor P. Janin, France; Myron D. Jewell, New York; Samuel H. Johns, Delaware; R. Frank Jones, New York; Augustus D. Josselyn, Maine; Leonard F. Kellogg, Iowa; Horace G. Lawson, Canada; Martin H. Lutz, Pennsylvania; D. D. Lester, Virginia; Edwin R. Magnus, Connecticut; William T. Mahon, Pennsylvania; W. R. Mail, Indiana; Addison S. Melvin, Jr., Illinois; Calvin R. Moulton, California; Bruno Albert Nernst, Germany; Robert H. Nones, Pennsylvania; Frank Delavan Norton, New York; George D. O'Neil, Australia; John F. O'Neill, Iowa; Allison J. Parker, Massachusetts; Myron F. Parmley, Iowa; Charles M. Porter, Pennsylvania; Edward W. Pratt, Connecticut; James J. Ryan, Massachusetts; Albert H. Schildt, Wisconsin; Forbes C. R. Scott, France; William S. Sherman, Rhode Island; Frank M. Swain, Illinois; Louis Teichmann, Germany; Edgar W. Thompson, New York; Charles P. Tuttle, New Jersey; R. F. Verrinder, M. D., California; Hugh Walker, Canada; Frank W. Wolf, Illinois; Hiram M. Wolf, Illinois; Morris Zeadler, Russia.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

THE twenty-ninth annual commencement was held at the American Academy of Music, Philadelphia, Thursday, February 26, 1885.

Matriculates, 136; Graduates, 69 as follows:

I. H. F. Albrecht, Germany; Deogracias Ascencio, U. S. of Col. S. A.; Thomas James Barrett, Massachusetts; J. Irwin Bayles, New Jersey; L. N. Bedford, Iowa; Franz Binotsch, Germany; William Blanc, New Jersey; Librado Borja, Mexico; Charlos Bonilla, Nicaragua, C. A.; Johanna von Bremen, Germany; Frederick H. Brown, New Hampshire; Frank P. Coburn, Pennsylvania; William B. Conner, Ohio; Frank G. Cooper, Pennsylvania; Alexander J. Culbertson, Pennsylvania; Samuel B. Detweiler, Pennsylvania; Carlton L. Dobbins, New Jersey; James M. Easton, Pennsylvania; Herbert H. Emley, New Jersey; Edward A. Ferbach, Germany; Frank R. Fisk, Minnesota; Henry J. Fisk, Connecticut; Elmer E. Fleming, Pennsylvania; J. Glen Fling,

Pennsylvania; Oscar Gerdtzen, Chili, S. A.; Rudolph Gilgenberg, Germany; Paul L. Gibson, New York; Leon Goble, New Jersey; Paul Guye, Switzerland; Charles F. Hager, Pennsylvania; Eugene C. Honeywell, Pennsylvania; Mason P. Harvey, Maine; Townsend H. Jacobs, Minnesota; J. Stewart Jackson, New York; F. H. Kendrick, Massachusetts; Richard Knobelsdorff, Germany; Paul Karrer, Switzerland; Alfred H. Little, New York; Oliver P. Lund, Pennsylvania; Richard Longe, Germany; Percival E. Loder, M. D., Pennsylvania; Roscoe Murphy, New Jersey; A. Howard Macpherson, New Jersey; John A. McClellan, Ohio; Ferdinand E. Mueller, Germany; E. M. S. McKee, Pennsylvania; Rush J. McHenry, Pennsylvania; Willmer D. McKissick, Pennsylvania; George C. Moore, Pennsylvania; Samuel E. Marshall, Delaware; Herman Reamer, Pennsylvania; Delfin F. Restrepo, U. S. of Columbia; David S. Reed, Pennsylvania; Anna B. Ramsay, Pennsylvania; Albert Rentzing, Germany; William F. Ravel, France; Marvin L. Rowe, Canada; Alfred Steiger, Switzerland; William S. Sullivan, Wisconsin; George H. Swift, Vermont; E. A. Shulenberger, Pennsylvania; Edgar W. Smith, Maryland; Michael Jos. Spahn, Germany; Wilhelm Seltzer, Germany; David P. Tait, Pennsylvania; C. Osborne Tupper, A. B., Canada; Chas. E. Walrad, New York; Henry Weston, Pennsylvania; Frank W. Williams, Massachusetts.

NEW YORK COLLEGE OF DENTISTRY.

THE nineteenth annual commencement of the New York College of Dentistry, was held at Chickering Hall, on Monday evening, March 9th, 1885.

The degree of Doctor of Dental Surgery was conferred upon 46 candidates. The number of matriculates 165.

The graduates are as follows:

Fremont Allen, New York; Lyndon C. Allen, New York; Louis Arndt, New Jersey; Wm. F. Atkinson, New York; Enrique G. de la Beldad, Spain; Lemuel P. Blair, Maine; Ramon G. de la Beldad, Spain; Max R. Brinkman, Massachusetts; Herbert W. F. Cady, New York; Robert H. Cochran, Massachusetts; Frank S. Crane, New Jersey; Martin Degenhardt, New York; Arthur Dodge, Ph. B., Connecticut; John Dinges, Germany;

Charles H. Eagleton, New York; Thomas A. Fitzpatrick, New York; Edward S. Fonda, M.D., New Jersey; Frederick W. Gibbs, Connecticut; Joseph M. Henriquez, West Indies; Henry J. Hull, New York; Ignacia V. Herrera, Cuba; George J. Harnung, New Jersey; Charles W. Howard, New York; Arthur F. Hawes, New Jersey; Daniel W. Kleinhans, New Jersey; Leonard K. Knox, New York; Lyman S. King, New York; Allan S. McDougal, New York; Charles J. Mooney, New York; Joseph W. Moore, New York; Wellslake D. Morse, New York; Henry L. O'Brien, New York; Frederick W. Pape, Germany; Virgil F. Parker, New York; Louis A. Queen, New Jersey; Julius W. Rivinius, New York; Livingston J. Roberts, New York; John Roberts, Wales; Joseph N. Shenstone, New York; Samuel Simon, Massachusetts; Karl C. Smith, New York; Charles R. Smith, New Jersey; Arthur L. Swift, New Jersey; Johan A. Theo. Weber, Finland; William M. Wyant, New York; Louis M. Villalon, Porto Rico.

UNIVERSITY OF MARYLAND; DENTAL DEPARTMENT

ANNUAL Commencement in connection with the seventy-eighth annual session of the University, at the Academy of Music, Baltimore, Md., March 17, 1885.

Matriculates 74. Graduates 36:

Madison A. Bailey, South Carolina; E. Payson Beadles, Virginia; Henry Clinton Bradford, Virginia; Claude D. Brown, Virginia; John P. Carlisle, South Carolina; Joseph W. Carter, Missouri; Thomas M. Comegys, Tennessee; Frank J. Cooke, Texas; Willie Edward Dorset, Virginia; Joseph Fournier, Jr., New York; Ferdinand Groshans, Maryland; Charles W. Hebbel, Maryland; John W. Helm, Maryland; Charles E. Hill, Australia; Ulysses Sylvester Hougland, Indiana; Clarence Henry Howland, Dist. Columbia; A. Hersey Howlett, Pennsylvania; Peyton Hundley, Virginia; Eli E. Josselyn, M. D., New Brunswick; John S. Kloeber, Virginia; Augustus Matthews, North Carolina; Robert T. McQuown, Virginia; William P. McQuown, Virginia; Wm. McIntosh Norwood, South Carolina; Will W. Parker, Minnesota; Henry Clay Pitts, North Carolina; Capers D. Perkins, Georgia; James M. Ranson, Jr., West Virginia; Brooks Rutledge, South Carolina; Charles T. Schaer, Maryland; William Sherman

Trapp, Pennsylvania; Fred. A. Twitchell, Minnesota; Albert Wangemann, Germany; Floyd J. Welch, Virginia; William F. Wegge, Wisconsin; Frank LeRoy Wood, Maine.

BALTIMORE COLLEGE OF DENTAL SURGERY.

THE forty-sixth annual commencement occurred March 5th, 1885, at the Academy of Music, Baltimore.

Matriculates 79; graduates 28, as follows:

Eugene F. Adair, Georgia; H. Clay Anders, Maryland; John M. Anderson, Virginia; J. A. Breeland, South Carolina; G. P. Chaponis, France; Thos. L. Cobb, Alabama; Ola B. Comfort, Pennsylvania; E. E. Early, Maryland; C. H. Gatewood, Virginia; H. H. Hafer, Georgia; J. E. Hancock, North Carolina; M. Parke Harris, California; L. Hedrick, California; Samuel H. Jones, New York; J. C. Morgan, Kentucky; Herbert Phillips, Massachusetts; C. G. Richardson, South Carolina; Phineas A. Sherman, Massachusetts; G. Marshall Smith, Maryland; W. B. Sprinkle, Virginia; J. M. Staire, Pennsylvania; Claude A. St. Amand, South Carolina; N. A. Strait, District of Columbia; R. E. Sunderlin, New York; J. H. Swartz, Pennsylvania; Geo. S. Todd, Maryland; R. C. Warfield, Maryland; F. K. White, Maryland.

DENTAL DEPARTMENT IOWA STATE UNIVERSITY

MARCH 3, 1885, was held at the Opera House, Iowa City, the third annual commencement of this school.

The graduates (16), are as follows:

Emory L. Brooks, Iowa; Henry Clemens, Iowa; H. M. Dalzell, Iowa; L. K. Fullerton, Iowa; G. E. Fisher, Iowa; H. A. Harlan, Iowa; John P. Hunt, Iowa; J. C. Holland, M. D., Iowa; J. C. Mitten, Iowa; H. M. McAlister, Iowa; J. A. Ross, Iowa; F. H. Rule, Iowa; H. H. Smith, Iowa; J. L. Small, Iowa; C. G. Thomas, Iowa; S. R. Wagoner, Montana.

DENTAL DEPARTMENT MINNESOTA COLLEGE HOSPITAL, MINNEAPOLIS.

GRADUATES: Jno. H. Spaulding, Minneapolis; Jno. H. Dwight, Minneapolis; Chas. L. Opsal, Minneapolis.

MISSOURI DENTAL COLLEGE.

EIGHT graduates as follows:

J. H. Bland, Missouri; G. V. Collins, Illinois; C. B. Helm, Illinois; M. D. LaCroix, Illinois; H. C. Miller, Missouri; S. T. Neill, Missouri; W. H. Wright, Missouri; F. A. Williamson, Minnesota.

KANSAS CITY DENTAL COLLEGE.

COMMENCEMENT March 17, 1885, four graduates:

*W. M. Dunning, Kansas.

†H. I. Parr, Kansas.

John E. Crozier, Missouri.

J. W. Buchanan, Missouri.

*Prize for best general examination.

†Prize for best examination in dental pathology and oral surgery.

Societies.

"Wherewith one may edify another."

THE OHIO DENTAL COLLEGE ASSOCIATION.

THE stockholders of the College met in annual session in the lecture room, Tuesday March 3, 1885. About sixteen members were present. The President, Dr. Frank Bell, occupied the chair. The Secretary, Dr. Frank A. Hunter, read the minutes of the last annual meeting; on motion, approved. On motion, Dr. Geo. W. Fels was elected to membership. The election for trustees resulted in the re-election of the outgoing officers, Drs. Geo. W. Keely, C. R. Taft and James Leslie, to serve for three years.

The following officers were elected to serve for the ensuing year:

President, J. T. Irwin, Cincinnati; Vice President, A. O. Rawls, Lexington, Ky.; Treasurer, James Leslie, Cincinnati; Secretary, Frank A. Hunter, Cincinnati.

The Dean of the College, Dr. H. A. Smith, stated that the suit of Rosenthal *et al* had been decided by the District Court (two to one) in favor of plaintiffs and had been taken to the Supreme Court of Ohio for final trial. As we understand it the case was not tried on its merits before the District Court but was submitted on argument for the purpose of getting it certified to the higher court. The Treasurer, Dr. James I. Taylor, made an incomplete report as follows:

Balance on hand last report,	-	-	-	-	\$1.70
Expended by the Faculty for repairs,	-	-	-	-	295.35
Present balance,	-	-	-	-	.45

The report was accepted, as incomplete, and Drs. Leslie, Cameron and Bell appointed a committee to audit the accounts and vouchers.

Adjourned to meet Tuesday March 2nd, 1886.

IOWA STATE DENTAL SOCIETY.

THE twenty-third annual meeting of this society will be held in Des Moines, on the first Tuesday in May. This meeting is expected to be one of the best in the history of the society. It is hoped that every dentist in Iowa will realize that he cannot afford to stay at home. A cordial welcome is extended to members of the profession from other States.

J. B. MONFORT, *Secretary*.

Fairfield.

THE MAD RIVER VALLEY DENTAL SOCIETY

WILL meet in the parlor of the Phillips House, Dayton, Ohio, Tuesday, May 19, 1885, *for one day only*.

Sessions begin: Morning at 10; afternoon, 2 and night at 7 o'clock.

It is hoped that all who have attended and enjoyed the meetings of this live society (which has no constitution, by-laws, committees or routine business), will go again and take others

with them. All are invited. Nothing comes before the meeting except papers and discussions.

ILLINOIS STATE DENTAL SOCIETY.

THE twenty-first annual meeting of the Illinois State Dental Society, will be held at Peoria, Ill., commencing Tuesday, May 12, 1885, and continuing four days.

The State Board of Dental Examiners will be at the National Hotel, at 10 A. M., Monday, May 11, at which time candidates for examination must present themselves punctually. The examinations will occupy until Thursday, May 14.

J. W. WASSALL, *Secretary*,
103 State street, Chicago.

NEBRASKA STATE DENTAL SOCIETY.

THE Ninth Annual Meeting of the Nebraska State Dental Society will be held at Lincoln, Tuesday, May 12th, 1885, and continue in session three days.

W. F. ROSEMAN, *Secretary*,
Fremont, Neb.

Our Aftermath.

WHO WOULD NOT BE A DOCTOR?—Quite a number of our young men are studying for the medical profession. We do not wish to deter them from this laudable pursuit, for a physician's calling is one of the most honorable, ennobling, humanizing, and useful in the world. But all is not gold that glitters, and the following are some of the sweets of the doctor's life: If he visits a few of his patients when they are well, it is to get his dinner; and if he does not do so, it is because he cares more for the fleece than the flock. If he goes to synagogue regularly, it is because he has nothing else to do; if he doesn't go, it is because he has no respect for the Sabbath nor religion. If he speaks reverently of Judaism, he is a hypocrite; if he doesn't he is a materialist. If he dresses neatly, he is proud; if he doesn't he is wanting in self-respect. If his wife does not visit you, she is "stuck up;" if she does, she is fishing for patients for her husband. If he has a good turnout, he is extravagant; if he uses a poor one on the score of economy, he is deficient in necessary

pride. If he does not write a prescription for every trifling ailment, he is careless; if he does, "he deluges one with medicine." If he makes parties, it is to soft-soap the people to get their money; if he does not make them, he is afraid of a *cent*. If his horse is fat it is because he has nothing to do; if he is lean, it is because he isn't taken care of. If he drives fast, it is to make people believe somebody is very sick; if he drives slowly, he has no interest in the welfare of his patients. If the patient recovers, it is owing to the good nursing he received; if he dies, "the doctor did not understand his sickness." If he talks much, "we don't like a doctor to tell everything he knows," or "he is altogether too familiar;" if he don't talk, "*we like to see a doctor sociable.*" If he says anything about politics "he had better let it alone;" if he don't say anything about it, "we like to see a man show his colors." If he does not come immediately when set for, "he takes things too easy;" if he sends in his bill "he is in a terrible hurry for his money." If he visits his patients every day, it is to run up a bill; if he don't it is unjustifiable negligence. If he orders the same medicine, it does no good; if he changes the prescription, he is in league with the druggist. If he uses any of the popular remedies of the day, it is to cater to the whims and prejudice of the people, to fill his pockets; if he don't use them, it is from professional selfishness. If he is in the habit of having frequent consultations, it is because he knows nothing; if he objects to having them, on the ground that he understands his own business, "he is afraid of exposing his ignorance to his superiors." *If he gets pay for one-half his services he deserves to be canonized. Who wouldn't be an M.D.?—The Hebrew Standard.*

GLYCERIN AS AN EXCIPIENT.—The employment of glycerin in pharmacy is becoming more and more extensive every day, owing in great measure to its property of dissolving various medicinal substances. It is thus very generally used instead of lard or oil in a number of cosmetic preparations. It makes an elegant excipient, but, unfortunately, will not penetrate the pores of the skin, and prevents also the absorption of any drugs which it may hold in solution. Dr. P. Vigier has recently made some experiments upon himself, which are very simple and may be repeated and verified by anyone, which show in a striking manner the uselessness of employing glycerin as an excipient when absorption of the active ingredient is desired, (*Memorabilien*, Nov. 20, 1884). He was never able to detect iodine in the urine after repeated inunctions of a solution of potassium iodide in glycerin (one part to three), but, when the glycerin was replaced by a fatty substance, the presence of iodine in the urine was at once manifest. A five per cent. solution of muriate of morphia in glycerin rubbed into the skin produced not the slightest narcotic effect. A one per cent. solution of sulphate of atropine applied for six hours to the temples caused no dilation of the pupils. Still more striking was an experiment made with corrosive sublimate. A five per cent. solution of this substance in glycerin was rubbed strongly upon the skin, yet produced not even a reddening of the surface, nor was mercury detected in the urine. The result of this experiment leads Dr. Vigier to recommend the employment of a glycerin solution instead of the mercurial ointment as a parasiticide, since with the use of the latter there is always more or less absorption of the drug.

SOME DELUSIONS REGARDING DISINFECTANTS.—A lecture on "Disease Germs" was delivered last week by Dr. George M. Sternberg, U.S.A., at the College of the City of New York. He criticised certain of the popular modes of disinfection. Some of the measures of disinfecting, he said, still recommended, so far as any real value is concerned, may be classed with the charms and incantations of superstitious savages, or the solemn processions and religious ceremonies which in some countries are relied upon to arrest the progress of pestilential maladies. The flannel rag saturated with carbolic acid and hung up in the sick room and the chlorine saucer placed underneath the bed are as impotent as the songs of the savages or the ceremonies of the heathen. Such measures only do harm by leading people to neglect the far more important measure of admitting an abundance of fresh air, by which the disease germs may be floated away and finally destroyed. The sulphate of iron, sulphate of zinc, carbolic acid, and numerous proprietary disinfectants in the market, although valuable as antiseptics or as deodorizers, are untrustworthy for the destruction of germs. In their place Dr. Sternberg recommended half a dozen other disinfectants, among them liquor sodæ chlorinata, which he considered far superior to many much-lauded germicides now in the market.

HYGIENE OF OCCUPATIONS.—The following tables by Prof. G. H. Rohe, professor of hygiene College of Physicians and Surgeons, Baltimore, is based on the deaths in Massachusetts from May 1st, 1843, to December 31, 1874,—a period of thirty-one years and eight months.

Ocupations.	Number of persons.	Average age at death.
All classes and occupations - - - - -	144,954	50.90
Cultivators of the soil, - - - - -	31,832	65.29
Active mechanics in shops, - - - - -	16,576	47.57
Inactive mechanics in shops, - - - - -	17,283	43.87
Laborers—no special trades, - - - - -	28,058	47.41
Factors, laboring abroad, - - - - -	7,035	36.29
Employed on the ocean, - - - - -	8,814	46.44
Merchants, financiers, agents, etc., - - - - -	15,965	48.95
Professional men, - - - - -	5,175	50.81
Females, - - - - -	3,343	39.13

SUIT AGAINST A DENTIST.—A San Francisco dentist brought upon himself a heavy suit for damages in the following way. He agreed with a patient to fill her teeth for seventeen dollars and a half, but demanded five dollars more upon completion of the work, and, when she declined to pay that amount, forcibly removed the fillings. Suit was brought against him for damages, and the jury awarded a verdict of two hundred and seventeen dollars and a half, besides costs of the suit.—*Medical Times*.

OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. V.

MAY 1, 1885.

No. 5.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

THE USE OF THE KEY.

BY DR. E. J. WAYE, SANDUSKY, O.

IN a recent issue of the *Dental Cosmos* appeared an illustrated paper bearing the above title. The writer, Prof. Thomas Fillebrown, M. D., D. M. D., highly commends the use of this instrument as most fit and appropriate for the extraction of certain of the teeth and roots which he designates.

At this time when the preservation of the natural teeth, and roots as well for the attachment of artificial crowns, is among the most prominent subjects which attract the attention of dentists, and the extraction of either a tooth or a root, which by proper treatment might be made useful, is believed to involve a measure of culpability on the part of him by whom it is done, such a paper would appear to be ill timed, and particularly so when, as in the present instance, the views held and advocated regarding this instrument are in direct contradiction to those held by men most eminent in the profession.

But when it is remembered that in every community there is

to be found a large proportion of people, neither whose means nor inclinations render them amenable to those modern methods, and whose release from suffering hinges upon the question either of extraction or endurance, any method or instrument which promises an alleviation of the dreaded pangs of extraction should be gladly welcomed.

That the turnkey described, if again brought into general use, would tend in the least degree to this end, is doubted. The instrument, the use of which in the hands of doctor, dentist, and barber, has in the past inflicted such barbarities as has banished it from the office of the intelligent and educated dentists, to the dental museum, or the unskilled hands of the country practitioner, who prefers to use it rather than incur the expense of a set of forceps, the use of which he does not understand, is the same old murderous affair denounced by Desirabode as a "dangerous instrument;" by Robertson as "an instrument of torture and of dread;" and by Taft, as one "which always bruises and lacerates the gums in a cruel manner." Quoting the three foregoing opinions, Prof. Fillebrown modestly declares that these statements regarding it "are not true," but that the instrument "is falsely charged with all those evil results which are in fact due to the lack of skill on the part of those using it," and that all that is necessary to convince any unbiased mind of the "groundlessness of the abuse it has suffered, is a careful observation and study of the instrument." This is supplemented by cuts and a description showing its parts, and the method of application.

The key illustrated in his paper is one of the most cruel and unscientific of its kind, and one which, owing to the direction in which the force is applied, is calculated to produce the most terrible results. The fulcrum rests upon the side of the gum, the hook, directly opposite, upon the tooth. When force is applied by means of the shaft upon the hook, the strain is in a lateral direction, or at a right angle with the tooth; and one of two things must inevitably result. Either the tooth is broken off at the point where the hook comes in contact, or, if that is sufficiently strong to withstand the immense lateral strain, then the process on the side next the fulcrum must yield sufficiently to permit the tooth to be moved in a lateral direction sufficiently to be withdrawn (which is the case when the operation is successful), or the lateral strain is so great as to tear out of the process

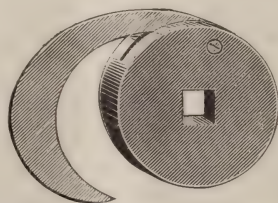
next the fulcrum, a piece varying in width from that of the tooth, to one-half or three-fourths of an inch in width, and from one-fourth of an inch to the length of the root in depth as the process may be more or less vascular and yielding, and the amount of force applied be greater or less, but in any case, the gum, upon which the fulcrum rests, is either crushed, lacerated, or both in a painful and barbarous manner.

Such is the humane and gentle appliance, to which we are loftily invited to return, the reason for which and the only one offered for such a course, and which the writer evidently thinks should be entirely satisfactory and convincing, rests upon the statement that the writer, some years ago, had a partner, "in whose hands the key was a great success," so great indeed that although, as he frankly confesses, he himself "was full of prejudice and conceit," he was unable to resist the "logic of demonstration," and "was entirely converted." But as though fearing that this "great success" might not, in the judgment of all dentists, be recognized as a good and sufficient reason for the adoption of what all past experience, and every true principle of mechanics, prove to be both cruel and unscientific; he hastens to inform his readers that not himself and partner alone were concerned in this heterodoxy, but that there exists a kind of "apostolic succession," extending backwards from the present M. D., D. M. D., through several generations, to a dentist in Baltimore, and quite possibly on to the times of the Spanish Inquisition, when most instruments of torture would seem to have been in favor.

It is very apparent that with the Doctor the establishment of a "direct unbroken line of practice," however wrong and unscientific, an "apostolic succession" in which each one treads carefully in the steps of his predecessor, transcends in importance the laws of mechanics, the promptings of humanity, or the opinions of eminent men, while the use of the personal pronoun, first person singular, seventeen times in a paper of this length, would imply that whatever may have been the status of the first in this illustrious line of "succession," a due sense of the importance and dignity of the "line," has not been permitted to diminish, while the evidence that in his judgment the assertions of the last, in the line of succession should take precedence over law, may be found further on in his paper, wherein, with a modesty peculiarly

his own, he declares "Much philosophy has been expended to show that the angle at which the force is applied is such as to endanger the tooth and alveolar walls, and that an excessive amount of force is needed to perform the operation. My own experience is so opposite to this, that it sounds to me like the reasoning of a theorist who has had no practical knowledge of the subject under consideration, but who has taken the results of unskillful misapplication and the bungling mistakes of blacksmiths for proper use, and thus, in some sense, legitimately arrived at such mistaken conclusions." And then, as if to present, in a still stronger light, the antagonism between his statements, and the laws of mechanics, he presents drawings of his ideal key, which, if correct, prove his assertions to be an utter impossibility. Whenever an apostolic succession shall be accepted instead of facts, and the teachings of experience, when the mere assertion of any individual whomsoever, will stand against well understood and immutable laws, then, and not till then, may Dr. Fillebrown hope to see the crude, unscientific, and cruel turnkey, described and illustrated in his paper, again numbered among the instruments for extracting teeth by any other than the country practitioner or the barber.

Below is presented a cut of a fulcrum and hook. Both the idea and the instrument were the creation of our own brain and hands, in the year 1855, being then a student.



It differs, as will be seen, from the ordinary key in this marked particular, where the fulcrum in common use is hollowed or concave on the side next the gum, this one is convex, a circle, an important difference. It is this convexity which fixes the point upon which is the pressure when force is applied, and it will invariably be found to be *above* where the point of the hook is placed upon the opposite side. When force is applied by means of the shaft, the rolling motion imparted to the fulcrum, gives it a direct lifting power in a line with the axis of the tooth, which

is exerted in this direction a distance sufficient to loosen, and in most instances remove it. That this instrument is constructed upon true mechanical principles, that by its use from one-third to one-half less force is necessary, and that no laceration of the gum will result is easily demonstrated. Any man familiar with the use of the old key, and who will give it a trial, will differ from any who have made the experiment where it has been under my own observation, if he does not arrive at this conclusion.

HOW TO INCREASE YOUR BUSINESS.

BY J. A. ROBINSON, D.D.S., JACKSON, MICH.

[Read before the Southern Dental Association at New Orleans, La.]

It was Daniel Webster who said "there is always room at the top;" but it is not always the most competent dentists who have the best patronage. Why is this? and what is the remedy?

There can be only one answer to this question, and that is, this fact is not well known and understood by the community who desire to patronize a dentist. The flower that is "born to blush unseen and waste its sweetness on the desert air," may be of real use to itself, but it is of very little use to the world.

To have push without ability is idle, and ability without push will not remedy this state of things. You must do the things that others *do not do* to make yourself felt in the world; and to do this requires constant study and effort. One of the great helps is, read all the dental journals, attend all the meetings. Read the journals thoroughly. If there is a good article published in three or four different journals, read it in each of them; for good articles will bear reading three or four times, until you are imbued with their truths. Demosthenes copied Thucydides' history of the Peloponnesian War nine times over with his own hand, in order to drink in its spirit. There is a large field for labor that has never been cultivated by the average dentist. The treatment of diseased teeth and gums is scarcely understood or practiced. Artificial crowns are rarely attempted, except in large cities. The band round the root is the most difficult thing to the beginner, and the most simple to make when understood. Three or four years ago we recommended to

make platinum bands, plated with scraps of gold foil, and rolled to 36 of the guage. The platinum band will never melt, or change form by heat. Cut it the desired width, bend it round the root, so that the ends lap, and draw it tight by twisting a fine binding wire round it till it fits. The root should have all the enamel cut off round and under the free margin of the gum. This is easily done with an excavator that is sharpened on the four sides, (and all excavators should be made that way). Run the excavator under the free margin of the gum, and you will find the enamel cleave off very readily, and your band will fit more perfectly, and be more firm; and the cement adheres better to the dentine than to the enamel. When the band is drawn tightly to the root remove it, cut through both ends of the lap with sharp shears, draw the edges together, and solder with pure gold, and your band will always fit. The screw that is used with the How crown is excellent for the post, as it will stand any amount of heat, is not easily bent; and corrodes but slightly with the phosphates.

We catch only glimpses of truth. The beginnings are like the morning sunlight,—the gray before the dawn. Franklin the first, then Morse. then Field perfected the telegraph. There is a legend among photographers that when Morse had caught the initial of the telegraph, he visited M. Daguerre of France, who had about that time invented the daguerreotype, and that the old Frenchman was so jealous that something might injure his interests that he burned everything about his premises, fearing Morse might find something that would detract from his glorious discovery. When one can interpret the first beginnings of truth, they often sweep beyond the ancient shores that were thought secure. In the great inundation of light in our day it is hard to discover what is solid. Our improvements grow in accordance with our affections. For instance, a dentist sees a filling that has failed; he is dissatisfied; his affections are wounded, if he has a real love for saving teeth; his eye catches the imperfections, and being just to himself and his patients, he tries to improve. If he works much in amalgam his affections will be wounded every day. In seeking to gratify his affections he must abandon what is a failure, or try something else, or try to improve his filling or his amalgams. It was early in the year 1883 that I began to fill teeth with what I called a "new amalgam." It was described in

the OHIO JOURNAL. Prof. Flagg called it a *mixture*. It consisted of mixing the Fibrous Metallic Filling with oxychloride into a thick putty-like paste, and using it in the same manner as the old amalgams. I always used it under the most unfavorable circumstances and in the poorest teeth; but I have yet to see a single failure or breakage, or discoloring, or breaking away from the tooth. Dr. Elliot, of London, England, gives a tabulated statement, republished in the *Independent Practitioner*, of the expansion and shrinkage of the different kinds of amalgams, thirty in number, and says, "we have had enough untruthful statements of manufacturers such as 'this amalgam does not shrink or discolor in the mouth,' " etc.

I presume we shall all use amalgams *sometimes*; but the word *sometimes* ought to be used with its true significance, which means *not often*. When we do this, I believe the filling is made much safer by absorbing as much of the mercury as possible, with thin tin foil after it is placed in the cavity; and I have often thrown a stream of hot air upon the tin to attract the mercury out by heat. The tin fills the interstices, and helps to keep bright this most uncertain of all materials used to save teeth. I believe also that this infusion of tin after the amalgam is placed in the cavity gives more edge strength, and helps to prevent the blackening, and will allow a certain amount of expansion of the filling to the walls of the cavity by burnishing, to counteract the shrinkage that always attends crystallization.

However much we may disagree about the merits of amalgams, we must all agree that we wish they were better, or could be made better.

When we have used all the arguments in their favor, the desired object of saving teeth fails to be accomplished. When we leave the field of argument and fall back upon practice, we invariably wish they were better, and when we feel in that way it is very poor satisfaction to a man who sincerely loves his profession.

Amalgams and oxyphosphates always discolor the enamel and dentine; but the fibrous filling does not. You will find while the filling becomes dark it does not discolor the enamel.

Dr. Miller, of Berlin, in the February number of the *Independent Practitioner*, tells us of the failures of the phosphates, and then tells us that a filling composed of tin and gold is better.

Now this is what we have said for years of the fibrous foil, that is composed of tin, platinum and gold.

Dr. Harlan, of Chicago, said he had abandoned it because it turned black. What is the good of a filling that will keep bright, if it will not save teeth? Then Prof. Watt tells us that tin and gold are more antiseptic when combined, than tin alone; also that the antiseptic qualities are increased by corrosion.

The steps of progress are often slow, but there has never been an asking of the human heart that has not had an answer. The lining of rubber plates with fibrous foil cured all inflamed mouths; and now the fibrous lining material has been improved upon by a *vulcanizable gold*, which seems to be all that could be desired, because it places it within the reach of all, and makes a very perfect artificial denture that is very beautiful, and one that will not change color or come off from the plates. A rubber plate with a gold lining is the best artificial denture in the world.

A large number of facts that exactly correspond soon become a law. Carlyle relates a story of the elder Darwin, grandfather of Charles Darwin, who believed in evolution, as did his father; but it was left for Charles Darwin to collect all the facts handed down to him, as well as the law of heredity he received, and to formulate the facts of natural selection, and the survival of the fittest into a law that is generally received to-day, while Mr. Carlyle insisted that the Darwins were all fools or crazy.

Correcting irregularities and treating diseased gums are important parts of our vocation that have been almost entirely overlooked by the average practitioner; and it is one of the most satisfactory and delightful branches of the profession. It cultivates high art, and develops the dentist, as well as the community. It broadens the profession, and brings relief to the mind that is fatigued with the daily toil of the operating chair. It cultivates art in ourselves and our patrons; and brings into near uses the things of beauty that were expected to remain ugly until the deformities could be remedied by a set of artificial dentures.

The subject of regulating teeth is far more practical and useful than a great share of the embryonic studies upon which so much time is spent by the dental student, and its practice will assist him in gaining a foothold to keep him from starvation. In this instance the first should be last, and the last first.

The fraternal feeling among the profession in cities is one of

the most dignified means to increase professional patronage. Let the people see that we have confidence in each other and they will confide in us. It is so in society everywhere.

Doctors Harwood and Keep broke friendship because Harwood had made some discoveries in the color of his enamel that he refused to impart; that came near making a rupture in the Boston Association. Secrecy and acquisitiveness are twin sisters, and combined, they dwarf the mind, and make unprofitable members of society.

Substance and form are only truth materialized. Where shall we find the mind that will peer into the future truth far enough to bring substance and form so perfect that we shall be able to restore the decayed teeth to their original beauty and magnificence? If my premises are true they will yet be found; but until found, they are of as little consequence as diamonds that lie imbedded in the bottom of the ocean.

It will be allowable in connection with this paper for me to say a few words of the "Robinson Remedy," as I do not make it for sale. Although the paper, that I read before the American Dental Association last August, was *cut* before publishing because I happened to mention Fibrous Metallic Filling, as I was interested in the manufacture. A remedy like patent medicines that will cure everything, ought to be looked on with distrust. Yet we are so unitized that certain remedies and mixtures that follow along the track of disease may reach disturbances sometimes by a circuitous route that will be as effective as a direct course. I have been using the Robinson Remedy, for many years, as an obtunder for sensitive dentine, and also as an explorer where fillings were supposed to be leaking under the free margin of the gums; for where there is the least opening to the dentine, the application is sure to produce slight pain at first, as it does when placed in the cavity before it has finished its work. It will disclose the most secret leakage, even when the finest pointed instrument will not enter. I also observed that loose and spongy gums were tightened round the necks of the teeth where the application had been made. Often when patients complained of soreness of the gums after filling, from irritation of a wedge, or clamp, or rubber, or matrice, an application would give relief. So also after the band for artificial crowns had made the alveolar ridge quite sensitive. The relief was quite certain and more permanent than that from chloroform. As a dressing for exposed pulps, I know

of nothing equal to it, when your patients are willing to bear a slight pain for a few seconds. My theory is that the carbolized potash is nearer the actual cautery than anything I have used, and its causticity combines with the fatty portion of the exposed pulp and destroys its texture and severs its connection and forms a saponaceous dressing that hardens the eschar and keeps out the loose dust that sometimes follows the use of the oxyphosphates and creates inflammation of the fibres. After the use of arsenious acid it is invaluable to remove nerve fibres, if any are left alive.

These facts led me to use it in cases of pyorrhœa alveolaris. Having accepted the bacteria theory, we must act upon that hypothesis until we find we are mistaken or some more plausible theory takes its place. Whether the pus is formed by the track of the bacteria, or whether the life of the pus is itself bacteria, must remain for the future. We know they are twin-sisters and always reside together. They are as inseparable as inspiration and labor; the one cannot exist without the other. The substance formed by the combination of carbolic acid and caustic potash destroys micro-organisms and gives nature a chance to recuperate from within. There may be a recurrence from the same cause that led to the first disturbance; and, as I think in most cases, the disease is brought about by neglect and want of cleanliness, we must insist upon thorough washing of the mouth after and during the treatment. Nutrition and life have been squelched out as we smother a fire; and the debris must be removed before the gums can have a full blaze of health.

Not the least requisite to success is to have the courage of your convictions and personal force enough to impress your patrons with the principles and truths you wish to teach. You must be a sort of missionary to the unlearned, and be able to make your friends and patrons feel your enthusiasm as you feel it yourself.

St. Peter tells us to "add to your faith, courage; and to courage, knowledge." You may love the past with your whole heart, but your intellect must be turned to the future. There is an immense realm that lies beyond the sight. We must utilize the things we have and reach out for perfection. Poor appliances and decayed teeth are sinners; and we must do all we can to make them better.

Many persons thought Mozart and Beethoven had exhausted

all the harmony in musical sounds, but Mendelssohn and Wagner came along and brought beauties in songs that had never been dreamed of by the old masters. Discoveries manifest themselves in epochs as the mind is lifted out of darkness.

True zeal, coupled with truth, cannot be opinionated. Sometimes when we think we love the truth, we are only loving our own ideas of what is true. True knowledge always bows down in reverence and adoration. It is because the truth is bigger than ourselves. We are here to subserve the uses for which we were created. It was not intended that man should be sick or lose his teeth. The main business of a dentist then, is, to preserve, in the best way, and with the best materials, those organs that come under his care. A failure is a discouragement to the dentist and his patrons. It is like a misspent life, only half utilized because of mistakes. Anything superficial will not answer. Our work must be made as permanent as possible, with the living organs. Our success in the future will depend on our ability to do this. Artificial dentures do not seem to be in the line of the growth and preservation of man. They are only things to make our existence bearable till we go to the grave. A man is not fit to become a dentist until he believes in this principle. If we are to be a profession, we must deal with principles above mere mechanism. The truths of science, the laws of nature, the simplest results of mechanical art; the law of justice and right, the law of truth and of love, are, and must be unitized in a profession to make it felt in the world. There has been an everlasting feud between truth and prejudice.

Our duty is only half performed unless we shall, at all times (however delicate the task may be), insist on the thorough cleanliness of the mouth. God Almighty is continually washing all nature with his dews and his rains; and why should we neglect man, the highest, the noblest and best of all his creations? If fermentation and putrefaction are the prime cause of decay, we must impress this truth upon the world.

It is painful to see that a large number of dentists advocate tooth extraction. We have fought against it for more than thirty years. It is not a part of our mission to assist nature in the law of evolution whereby the race may become toothless.

Edmund Burke said, "when bad men combine, the good must associate." There cannot be a too compact band of

justice loving persons to carry forward this work against charlatans. We must not allow the moral sentiments that at times inflame our hearts, to be turned exclusively into money making. We must make the world believe this as well as practice it; for belief lies back of conduct, as force lies back of motion. Whatever is fully believed is sure to be practiced; and what is not fully believed will never be performed. And so the last, but not the least thing to increase your business will be modest advertising, advertising in a dignified way, either by card or newspaper, and also in the omnipotent power of talk, and all communication; for it is by the free use of printers' ink that we elevate and enlighten the world. One obstacle in the way of more thorough work among the dentists is the lack of sufficient compensation for our labor. The world is full of equivalents. They lie in the nature of man. Man is unwilling to give more than he receives. There is no profession so poorly paid for its work as the dental. Professional labors are expected to be performed somewhat for the good of humanity, and good health lies at the foundation. The demand for cheap dentistry grows out of the fact that people do not value their teeth. Agitation through the press is the most efficient means to spread the light and the truth. The feudal days are past, the days of knighthood are gone, and we are a republic full of newspapers and all kinds of instruction; and yet there is less information among the people at large, on the subject of dentistry than any of the professions. The dentist is expected to spend more time in examinations without charge than any of the professions. Consultations in medicine usually end in a prescription that is paid for. The lawyer exacts pay for advice, and if employed has a retaining fee; and the minister has a fixed salary. The good dentist is constantly interrupted in his business hours with inquiries and examinations that are expected to be gratuitous. Information in regard to the care of the teeth should be placed in the school books from the primary lessons to the graduating class; and the truth and light on this subject spread through all the newspapers with the names of the persons attached who will courageously stand by their convictions and the truth. Arrogance and caste are dissipated as fast as light and truth illumine the world; and it is not by the breaking down of the high and good, but by the disestablishment of rank that always follows the law of progress. No body of men who are

thoroughly satisfied with themselves can expect to help the world, or to improve themselves individually. The dentists alone have the key to the situation; but how shall we carry forward the work? It seems to me this progress must grow out of the experience of the people at large, to stimulate their faith and become part of them, if we expect to become a distinct and a great profession, and expect their patronage. Think of the various conventions all over the land to lift the masses to a higher and better life. Think of the trades-unions to call people together and destroy isolation. Think of the world's fairs to bring the products of all climes to one point of exhibition, to feast the eyes of thousands, and enable them to behold the whole world without leaving their own country. The great exhibit we are attending now is only one. The demands of society are so great that it will not do to depend on the slow evolution of individual talent. Solitude may ripen thought, and bring out individual experiences that will help in certain localities; but the world at large must be instructed in regard to the value of their teeth. We owe this to ourselves, as well as to a long suffering humanity. We owe this to the rising generation. We owe this to our weak brothers, who would, but cannot do the things the world demands of them to keep pace with the progress of the age. We owe this to a profession that has outstripped all its brothers in the science of life, and in the healing art. These things can be accomplished only by labor, real hard work, and work all the time, and by the liberal use of printers' ink. We must do this as conscientiously as we do our daily work. When we grapple with the decay of the second molar, posterior surface of a tooth, if we expect to succeed, we must be ready for a fight, and demand pay for it. No half way blows will conquer. We must feel as though we were special providences in the hands of God, to prevent death, as much as the man who tends switch to direct the express train aright that is freighted with human life, and running fifty miles an hour. The man who neglects this is as guilty as the man who excuses a check in the telegraph wire that is to be galvanized over, to break the very moment it is needed to work to prevent a collision that will destroy human life.

Life is always the same, the only difference is quantity, not quality, but degree.

It is in the preparation for this battle that I urge you; and

that preparation means to inform yourself, by reading as many hours each day as your business will allow you, for the faithful performance of these tedious and delicate operations. For forty-nine years I have tried to do well; and I am here to confess that I never felt the responsibility of my position as a dentist as I do to-day. Teeth never seemed to me so sacred, and so valuable to the human race as now. It was Rubens, the painter, who said to a friend when he was ninety-three years old, that he had just begun to improve. We shall increase our business just in proportion as we know what to do with *tooth sinners* to save them; and what to say and do with the *tooth saviors* to make them more faithful to the high calling entrusted to their care.

ADDRESS OF WELCOME.

BY A. G. FRIEDERICH, M.D., D.D.S., NEW ORLEANS, LA.

[Delivered before the Southern Dental Association at the International Exposition, New Orleans, April 2, 1885.]

UPON me devolves the pleasant duty of extending to you, individually and as a whole, in the name of the dentists of New Orleans, a most hearty welcome, and I indulge the sincere hope that you will find our hospitality as warm and as bright as our sunny skies, and that the remembrance of your sojourn here may linger with you in after years and ever be as fragrant as the flowers of our own well beloved Southland; particularly to you, gentlemen, of the North, whose presence here lends additional honor and dignity to this assembly, do I desire that you will realize that, although you are in a new house, you are among old friends, and that there is peace in all our homes and peace in all our hearts.

Your convocation here in this great hall is particularly happy; here surrounded by the aggregated wonders of nature's handiwork, and by the evidences of man's skill and ingenuity displayed in innumerable ways, teaching in language more eloquent than words, the resistless progress of civilization.

What lesson does not this Exposition, this school of wonders, this epitome of human invention, hold out to the reflective mind? So likewise in a similar degree, though perhaps in a less ostenta-

tious manner, has the Southern Dental Association within its purview a similar duty. Its province should be to disseminate among the profession of the South the broadest culture, so that it might take rank second to none in all this broad land. Within the honored circle of its membership should be embraced the talent and accomplishments of this section, insuring to its deliberations a lustre and value that would send to our hearts a thrill of honest pride, and standing aloft as a beacon across the waters, shedding its rays upon the sea of science, point out the pathway to the sure advancement of our profession.

The unworthy reproach has gone forth that the status and personnel of the profession South are not up to the standard demanded by our Northern brethren, because certain of our dental societies have not been as exact as they might have been in examining into the qualifications of those seeking membership, thus admitting many who were ignorant and in some instances even those who had sullied the fair fame of the calling of their choice. I am at a loss for language sufficiently strong to reprobate such a course of practice. We cannot be too strongly impressed with the fact that we have an interest, a deep interest, in the character of every one seeking to be members of our association, and we should bear in mind that 'tis only by having every fountain pure that the stream may be made to reflect heaven's own purity from its pellucid bosom. I must say, however, it is a course of practice by which we at large should not be arraigned and convicted. The intelligent and upright among us repudiate the accusation as an aspersion in so far as it involves the general character of the profession South.

The day is passing away in which the ignorant can reap the rewards of the learned. Admission to association in a scientific body must be predicated upon attainments of a scientific nature. None are more keenly alive to this truth than we of the South.

What better evidence can be adduced? What grander monument to the enlightenment and progressive spirit of our section can we contemplate than when we reflect with mingled feelings of pride and pleasure that the first institution for the dissemination of dental learning ever established in the world had its birth-place in the South, and the first act incorporating a dental society, and the first law promulgated to regulate and protect the practice of dentistry in the United States of America were passed by southern legislatures.

No department of the healing art has made greater advances than that of dental science. Her progress has been truly phenomenal; hardly more than half a century ago public opinion did not require that a dentist should be a man of scientific attainments. His profession was then regarded as a mere handicraft pursuit, requiring no knowledge of general medicine or collateral science. His duties were supposed to be confined to a few mechanical manipulations which might be performed by any one possessing a little manual dexterity.

But this opinion has given way to a wider and juster appreciation of the importance of this specialty. Step by step has she advanced to higher planes of usefulness, and with each succeeding ascent broader and richer fields have opened to her view, until she not only claims but receives the respect and consideration which her merit deserves, offering to her votaries as honored a status and as distinguished a career as is within the gift of any of her sister sciences.

Medicine was long loath to own relationship to her younger sister. Whence, may I ask, this reluctance? Not from any disapproval of its ends and aims, for they were parallel with her own; not from dislike of the means that must be employed, for they are similar; not because it is a specialty, for her own ranks are full of specialists in highest repute; but because of the want of scientific information prevailing among dentists as a class, the consequent and palpable imperfections of their operations and because of their acts and modes of practice so common among them, from which a man of true professional pride holds himself carefully aloof as characteristic of charlatanism and imposture. The profession is rapidly redeeming itself. The demands of dental science are constantly enlarging. Each day demonstrates more clearly the propriety and importance of requiring that future aspirants to her honors must qualify themselves by a full course of medicine.

The words uttered by the Rev. Dr. Aydelotte, in the opening address before the Ohio Dental College, nearly forty years ago, were pregnant with a prophetic significance, when he said, "He (the dentist) is therefore a medical practitioner, that is exactly his position; to this rank, and nothing less, is he most rightfully entitled. The diseases of the mouth, with which the dentist is most specially concerned, must always sustain relations more or less extensive to other parts of the system and its different func-

tions; hence, no man can be a thoroughly qualified dentist, who has not a general acquaintance with the human structure and its various processes, together with its morbid status and their appropriate remedies. In this way only can he discern and duly appreciate the multitudinous, powerful and often subtle influences, as cause and effect, between the diseases with which he has to do and those affecting the whole or other parts of the system. Such relative knowledge will often throw a clear light upon what would otherwise be completely hidden from his view, and enable him successfully to treat what would otherwise baffle his utmost skill. When dentists generally are thus qualified they cannot fail to assume their rightful rank as professional men before the public."

No argument of mine can be more forcible, no language more eloquent of the doctrines of our profession than are these sentiments just quoted, expressed as they were when dentistry was in its infancy.

Lo! to-day the handwriting is on the wall in unmistakable characters, and he who reads and heeds them not, must not anger at the fate which awaits him.

Gentlemen, this gradual elevation of the status of dentistry has resulted mainly from the combined efforts of association—its benefits are manifest and incalculable. Through this agency, in this concentrating age, nearly all the great enterprises, whether in the cause of science or of art, for the purposes of benevolence or in the promotion of the more material objects of this life, wonders have been accomplished. This Exposition is a palpable demonstration of its power. This Association of Dental Examiners here in our midst furnishes testimony to its all-potent influence. I will not absorb your time by entering into detail. Their enumeration would require volumes, and moreover I feel that you appreciate better than I can express the ineffable benefits which accrue to us from the friction of mind against mind. Suffice that it has smoothed asperities, wakened the spirit of inquiry; enriched literature, established infirmaries, erected colleges and placed our profession upon the eminence which it occupies to-day—the mistress of our affections, the admiration of all.

Let not the Southern Dental Association prove recreant to the expectations reposed in her. Let all her energies be devoted to the great objects of her being, showing herself at all times worthy of her noble birthright, ever commanding and enjoying

the good will and approval of all men. It is the solemn duty of each of us to contribute our quota to the advancement of its usefulness and dignity, and no matter how unassuming our individual efforts may be, still each adding his mite to mite will swell its history and augment the catalogue of those "names which were not born to die."

Hours of darkness have encompassed her, trials have beset her on all sides, the storms of adversity and misrepresentation have beat upon her in vain. She has stood through all, sure and steadfast, and may she ever stand an imperishable monument to the wisdom and benevolence of her founders, of their concern for the promotion of science and the welfare of man:

As some tall cliff that lifts its awful form,
Swells through the veil and midway leaves the storm;
Though round its breast the rolling clouds are spread,
Eternal sunshine rests upon its head.

ASSIMILATION.

BY W. D. KEMPTON, M.D., D.D.S., CINCINNATI.

[Read before the Mississippi Valley Association of Dental Surgeons, Cincinnati, March 5, 1885.]

SEVERAL years ago a pharmaceutical student, viewing the rapid approach of examination day with apprehension, and lamenting the numerous difficult studies he was required to master, said to a student of mine, "I am sorry now that I took up pharmacy instead of dentistry, for all a dentist has to learn is about the teeth and gums."

This may seem absurd, but his opinion of the attainments of the profession is shared by a goodly number of the laity, humiliating though it be, and yet when we consider the calibre and qualifications of some of our professional brethren, we cannot blame them much. The teeth and the gums may seem a small matter, but when we consider the number of individuals whose daily occupation is the care of these organs, it is evident that they are important parts of the human economy. That this regard for them is not of recent origin is shown by the sayings of several old writers, among whom is Cervantes, who says: "I had rather they had torn off an arm, provided it were not the

sword arm ; for thou must know, Sancho, that a mouth without teeth is like a mill without a stone, and that a diamond is not so precious as a tooth." But that, however, was before the advent of those good Samaritans who make a brand new set of teeth for \$5, no charge for extracting. Now gentlemen when we consider the amount of literature that has been, and is being published on this subject, it would seem that about all that was possible to say had been said, and anything further would in all likelihood be a rehash of known facts. So that you need not be surprised if what I may say is not new to you.

Amongst all the heated discussions in regard to stopping the ravages of dental caries, the best material to do it with, and the best method of manipulating said material, we occasionally find some one who, "like the voice of one crying in the wilderness," calls our attention to the poor texture of many of the teeth we meet with, and questions whether it is possible to improve it. Others who have taken up this thought and investigated it, tell us the trouble is a deficiency of phosphates in the enamel and dentine, probably due to a lack of these principles in the food, and as beans, oatmeal, cracked wheat, rice, and graham flour are rich in these salts, consequently all that is necessary to do in order to build up a perfect set of teeth is that the mother during pregnancy and lactation, and the child after being weaned, should partake of a diet composed largely of beans, oatmeal, cracked wheat, rice, or graham flour, *a la* Dio Lewis.

We have all seen children whose deciduous molars have been swept away by caries before the eruption of the first permanent molars, whose incisors were soft and carious, whose muscles were flabby and mushy, and perhaps we have advised a diet of beans, oatmeal, cracked wheat, rice and graham flour, and have been told that such a diet had been attempted but the children rebelled against it. Perhaps we have tried such a diet on ourselves, only to give it up in a short time in disgust to return to the flesh pots of Egypt, concluding that the only reason the "Heathen Chinees" flourishes on such a diet is because he *is* a heathen.

If, however, we investigate the method of preparing these cereals for the table, we are struck at once with the astonishing stupidity of the average cook, and realize the truth of the saying: "The good Lord gave us the food but the devil gave us the cooks." We find that the rice, oatmeal or cracked wheat, are put

in a stew pan with an excess of water, placed on a hot stove and stirred every few minutes to keep from sticking to the vessel. The result is a pasty mess that is apt to be scorched, and sure to be unpalatable. If instead of this method the cereal was allowed to soak in a sufficient quantity of water till it had absorbed as much as it could, was then put in a tin vessel with a little water, and such seasoning as was deemed proper, placed in a water bath, and cooked a certain number of minutes, the result would be that the children would not only not rebel against it, but demand such a diet, for it will be found that the natural flavor has been retained, and the grains are whole instead of being in that disgustingly pasty condition usually seen. But gentlemen, we sometimes meet with persons in whose mouth, judging from their diet, we should expect to see teeth of adamant, but find instead the poorest kind. This compels us to seek some other cause than bad food, and leads us to the conclusion that defective assimilation should bear part of the blame.

What is assimilation? It may be defined as that process which turns grass into hair when eaten by cattle, and into wool when eaten by sheep. It is to the body what the workmen are to the building, and it matters not how much of the finest Italian marble, how much thoroughly seasoned ebony, rosewood, mahogany or other fine woods, how much iron, stone, lime, and other things necessary to the construction of a building are carted up and dumped down on a building site if the workmen are either on a strike, or are unskilled, for the building will surely be unsightly and liable to perish when the storms beat and the winds blow.

Assimilation, the function that is so important to life, is favorably influenced by several things, the most important of which is sunlight. We of this enlightened nineteenth century, who think that more progress has been made in it than in all the time preceding, are wont to look down with pity and contempt on the ancients, who bowed down in reverence and worshipped the glorious orb of day. But it is evident that they recognized in the sun the source of all good, perceiving that only bats, lizards, and such kindred vermin flourished in darkness. We, on the other hand in spite of our boasted intelligence, build our houses with little reference to light, and the windows too small by half are obscured by stained glass, lace curtains, or still worse

by those rag-carpet-resembling portieres: the rays of the sun are regarded with prejudice as they cause the carpets to fade. People who would never think of trying to cultivate plants under such unfavorable circumstances, keep their children in such places, and then wonder that they are anæmic, pale and sickly.

Another thing influencing assimilation is pure air, air that is not mixed with the emanations from filthy gutters, fermenting garbage piles, sewer gas, or the products of combustion that escape from the illy fitted joints in stoves or stovepipes, or the exhalations from the lungs in crowded compartments, in other words good hygienic surroundings. Still another influence is exercise, which is illustrated by the oft cited example of the blacksmith's arm. Exercise that calls into play a variety of muscles, creates a demand for nutritious food, which after being digested, and while circulating through the capillaries, is seized on with avidity by the various tissues, and incorporated in their substance.

In order to be of benefit the form of exercise should be such as to convey pleasure to those exercising, for unless they are interested in it they will regard it as a task, and not indulge in it. It is, however, when these three conditions, viz: sunlight, fresh air, and exercise are combined, that we get the greatest good from either, as one can readily see by passing along through our markets and observing the translucency and ruddiness of the complexions of the market men and women, while on the other hand the sallow, worn, and jaded appearance of those who work in factories indicate a lack of pure air and sunlight.

The conditions referred to above favor the production of good tooth structure in as much as they favor improvement in all the tissues, but there are certain local conditions to be taken into consideration, the principal of which is use of the teeth. It is a well known fact the use of an organ promotes growth, whilst disuse results in atrophy; and reasoning from analogy we conclude that the teeth are amenable to the same rule, and that the mania for chewing gum that is so prevalent among children, should be encouraged instead of tabooed.

In reviewing the unfavorable influences, we find first heredity, over which, however, we have no control, and so pass to the consideration of the next which is the drain of nerve force, due to a premature stimulation of the mental faculties, as seen in children

who have been sent to school too soon, in whom the nerve force that should go to the development of the muscular and osseous systems is diverted to the cerebrum, leaving the muscles and bones to get along the best they can, the result being a developed brain mounted on an impoverished body, that is supported by pipe-stem legs. The teeth are like chalk, and the muscles almost imperceptible. When such a being enters the race of life, and competes in the struggle for existence it soon succumbs.

In summing up we come to the conclusion that in order to improve the structure of the teeth we must begin at the beginning, and endeavor to improve the general condition. The young infant should be taken out airing every day (unless the temperature is in the neighborhood of zero) in order to get the full benefit of air and sunshine, and from the time it is old enough to walk, should be allowed to play out doors as much as possible. The windows of sleeping apartments should be opened for a certain length of time every day, in order to thoroughly ventilate them, and drive out all the excreta that may be impregnating the air.

Furthermore, children should not be sent to school too soon, probably not till they are eight, and surely not till they are seven years old, then the muscular and osseous systems are so far advanced that they can keep pace with the cerebrum. Again, let them chew all the wax they want to, and give them food that will exercise their molars.

This, gentlemen, is what ought to be done, but unfortunately too many of the laity regard us as mere menders of the masticating machinery, and pay little attention to our words, and seem to think the cobbler should stick to his last. Still there are some who pay attention to us, and profit by our precepts, so we should keep on and do our part towards promulgating knowledge.

THE DEVELOPMENT HYPOTHESIS.

BY C. M. WRIGHT, D.D.S., CINCINNATI.

[Read before the Mississippi Valley Association of Dental Surgeons, Cincinnati March 5, 1885.]

If the "Development Hypothesis" of scientists be true, and if it can be shown that any existing species—animal or vegetable—when placed under conditions different from its previous ones

—*immediately begins to undergo certain changes of structure fitting it for the new conditions*; then, it seems to me, we may be able to place dental caries in its true position in the economy of the universe. As the nervous system of man developed as he became more erect, and the facial angle enlarged in accordance with a condition where *intellect* is the predominant feature, the teeth naturally lost their value as weapons of defense against destructive enemies, and also as means of securing food for the system. We can well understand then that by almost imperceptible steps in the slow process of evolution, the conditions being changed, the structure of the teeth began to deteriorate as the nervous system developed. The dental profession has for a long time recognized dimly the relations between the nervous system and the teeth of man, and this hypothesis that we have referred to, may account more fully for the existence of the dentist too, than any other. If we accept it, is it not easy to infer that we are fighting with our frail excavator, burring engines, gold and porcelain, against the inevitable? And does not “dental caries” assume a more gigantic form that even our wildest imaginations have ever given to it? Can we hope simply with our skill and remedies to stay the mighty wave of Law and Nature that has been gathering impetus and volume for millions upon millions of years? How we pity or laugh at the child who vainly tries to hinder the rising tide of the ocean with his little dams of sand upon the beach? Yet this is what we are doing if we believe in the law of progress, when we try to stay the Juggernaut car of dental caries. Teeth of man must go. The conditions have changed. The relation between mind and teeth is tolerably clear, and as man advances in the qualities that make him great, his unnecessary appendages, unnecessary for survival in the struggle of life, must go. Would it not then be more philosophical in us to accept this fact, and define our duty clearly in our own minds. That duty would be, it seems to me, to regard the comfort and the ease of our patients, to alleviate pain, and to waste no energy in attempting the impossible, or in building flimsy air castles of hope for a future of *improved* dental organs in man.

MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

Discussion of the Papers on ASSIMILATION and THE DEVELOPMENT HYPOTHESIS.

[Reported for the JOURNAL.]

DR. A. W. HARLAN, Chicago: Dr. Kempton has not over-estimated the necessity for outdoor life, proper food and exercise. It is very difficult to compel children to follow out the precepts laid down for them, and heredity enters very largely into the question. This question of the assimilation is a very important one. Brilliant intellects do not long flash from a feeble frame but rise meteor like and as suddenly disappear. How to keep the bodies of our patients in good condition is a part of our professional functions. Correct notions of hygiene and no over-stimulation mentally will do more for the formation of good teeth than will the character of the material ingested. I do not take that gloomy view of the decadence of the human teeth that many do from observation of the teeth of prehistoric man. Ours compare very favorably with those two hundred or three hundred years back. We attempt to save and succeed in saving many thousands of teeth where our forefathers saved none—they were content to save ten or twenty while we try to save thirty-two. You can recognize this by the thousands of pounds of gold hammered into foil, the tons of amalgams, and the thousands of ounces of the cements and gutta-percha used for fillings. Again, we excel in the selection of the fittest to survive.

While it is true that many substitutes take the place of the natural teeth, it is true that many more of the natural organs are saved than formerly. It is not unusual to see teeth filled thirty or forty years ago, in frames that do not possess better constitutions than we do: therefore, we should persevere in making our greatest aim the preservation of the natural teeth.

DR. C. M. WRIGHT, Cincinnati: I should be sorry to have anything in my paper taken as derogatory of the efforts made to save the teeth. I take a much broader view of the matter—that we are fighting against a natural law.

DR. J. TAFT, Cincinnati: I don't see any indication in nature of the development of a retrograde movement. Why should it pertain to the teeth and not to the eyes or any other particular organ? Our work to-day is to rescue the teeth from the ravages of disease. We make the mistake, perhaps, that all specialists are liable to, unless educated to take a broad view of the subject, that of confining ourselves too closely to the one part. We must recognize the relations of all the organs one to the other—their development and maintenance all together. No man attempts to build one part of a house; a plasterer cannot do his part unless the work of the carpenter or bricklayer precedes him. We must care for and consider all parts of the system or we fail of our object.

DR. C. M. WRIGHT: I am sorry Prof. Taft doesn't care to live in harmony with nature or her great laws and cares only for to-day.

DR. J. TAFT: Did not say I didn't care, but deny that there is a law of nature such as Prof. Wright has presented.

DR. H. A. SMITH, Cincinnati: Dr. G. V. Black has a theory that there is a solvent secreted in the margins of the gums that causes the wasting away of the teeth at the necks, notably inferior cuspids, called abrasion. In a case of an inferior cuspid that I saw recently, the progress of the disease seemed up the tooth instead of in the direction of gravitation. What causes it? Is it due to a digestive fluid or the fermentation of organic matter? In the case mentioned, it seemed impossible that fermented food could have caused it. The nearer you approach the pulp in excavating, the greater is the disintegration or softening of tissue. Would not this indicate a drawing away of substance from the interior of the tooth?

DR. H. J. McKELLOPS, St. Louis: Have heard Dr. Black and others on this subject, but they do not give us a remedy. One case that came under my care, a lady aged thirty years. Ten years ago she had some good work done—the fillings are still good. When she first came to me I found this softening of the dentine around the necks of the anterior teeth. She has since married and has one child. The enamel has now disappeared from the molars and bicuspid; it made me sick to see it. No decay, filling perfect and mouth clean. Another case, a gentleman of unbounded wealth, willing to pay any price, has employed

the best operators in the country. The gold fillings disappeared, tried amalgam and that too is gone. His wife, of German descent, is a rosy, healthy mother of three children. Her teeth are going the same way. What we want is something to save these teeth. I told Dr. Black I'd give \$1,000, yes, \$2,000, and can get five patients who will give \$1,000 each for a remedy.

The phosphate cements give the best results of anything we have, but to prevent recurrence of the trouble, the fillings must be renewed often.

DR. H. A. SMITH: I want to bring this splendidly developed cuspid that I spoke of before the meeting, that we may get something definite. The enamel tissue is gone and the dentine wasting away. Is the tooth being destroyed by the withdrawal of nutrition? It isn't sensitive and gives no indication of being attacked by acids. It had been under treatment before it came to me. One gentleman had applied nitrate of silver. I told the patient the usual way was to fill the cavity. Am I doing right in filling these teeth and promising that they will be saved?

DR. F. W. SAGE, Cincinnati: I would like to ask, what is the outcome of these cases? Do they waste away until the nerve fibrils become so sensitive that extraction is necessary, or does the action of vital resistance come in and check the destruction? I have never seen any so sensitive as to necessitate extraction.

DR. H. A. SMITH: These cases often show a secondary condition where the action seems to be caused by acids or micro-organisms. Sometimes the cavities are of a shape to retain food and then we have the ordinary forms of decay. It seems to me a question whether the tooth would not be better without the pulp.

DR. G. W. SMITH, Cincinnati: The most recent theories of decay of the teeth, that of micro-organisms—

DR. F. W. SAGE: I protest against the gentleman giving us the old leptothrix buccalis theory.

DR. G. W. SMITH: No, sir; I am not. Read up and see for yourself. I was going to speak of the putrefactive process.

DR. A. BERRY, Cincinnati: Dr. Smith (G. W.) what is putrefaction?

DR. G. W. SMITH: Why, its putrefaction, of course.

Subject passed.

NEW REMEDIES FOR THE TREATMENT OF ORAL
AND DENTAL DISEASES.

BY A. W. HARLAN, M.D., D.D.S., CHICAGO.

[Read before the Mississippi Valley Association of Dental Surgeons, Cincinnati March 5, 1885.]

Cocaine Hydrochlorate.—I will not burden you with the materia medica and pharmacy of cocaine, as all of the recent numbers of medical and dental journals have teemed with papers and notices of this new local anæsthetic. From an experience of several months' use of cocaine I have found that the weaker aqueous solutions, two and four per cent., are nearly valueless for obtunding sensitive dentine in superficial cavities. A ten per cent. aqueous solution is effective when retained in a cavity for a period of ten minutes or longer. A ten per cent. solution in eugenol is even more valuable, and I prefer the latter for use in deep seated, sensitive cavities. When it becomes necessary to remove the pulp, a ten per cent. solution in ether is preferable, as the rapid evaporation of the ether enhances the local anæsthetic value of cocaine. In all superficial operations on the soft tissues of the mouth the weaker aqueous solutions are to be preferred as they are sufficiently potent when the soft parts have been dried and the surface to be operated upon is penciled and the solution allowed to remain undiluted for a period of from two to ten minutes. A drop of the four per cent. solution injected into the pockets, in pyorrhœa alveolaris, lessens the pain which results from the removal of small deposits on the roots of teeth. Cocaine is a styptic on account of a peculiar tannate which is found in the leaf. It is possible to extract several teeth by its deep injection in the inferior maxilla at the mental foramen or at the entrance of the inferior dental canal. In such cases the inferior dental nerve and its branches appear to lose all sensibility. Reference to its dental uses is here mentioned in order to draw out a full discussion.

Eugenol.—The writer called attention at the late meeting of the American Dental Association held at Saratoga to the above mentioned drug. A further use of it has demonstrated beyond a doubt that eugenol will supercede all other medicaments for the

treatment of alveolar abscesses with a fistulous outlet. I have used it in preference to carbolic acid, creosote, solutions of chloride of zinc, aromatic sulphuric acid, creosote and iodine, eucalyptus, and numerous other drugs formerly used for this purpose. As a dressing for root canals after the removal of the pulp, whether putrescent or not, no other drug is so agreeable or satisfactory to the patient. It is a potent germicide. I use it in full strength or diluted with oil of cinnamon, sassafras, gaultheria or some other agreeable essential oil. By making a creamy paste of iodoform in eugenol we have an elegant dressing for an exposed or nearly exposed pulp. The same paste may be packed into an inflamed pyorrhœa pocket with certainty of reducing the inflammation and permanently arresting the pain. Eugenol, oil of cinnamon, and crystals of carbolic acid, 3 ii. of the two first mentioned, 3 i. of the latter, applied to an aching tooth, will subdue the most refractory odontalgia. Eugenol is not gummy, deposits no sediment, does not deteriorate by age, and is not expensive.

Sanitas.—The oxidized oil of turpentine contains from ten to twelve volumes of peroxide of hydrogen, which is permanently stored up for future use. I use it in the treatment of all blind abscesses and for injection into the pyorrhœa pockets when an astringent is not indicated. In the latter cases I add either eugenol, oil of cinnamon, or sassafras, one part to three of sanitas. They disguise the odor of the turpentine, but do not wholly obliterate it. As a germicide and disinfectant in dental practice it should be very generally used. It does not injure an instrument or roughen or excoriate the hands as the bichloride solutions do. It is not poisonous except in large doses; an ounce would not destroy the life of an adult.

Mr. Ringyett, in a late number of the *Medical Times and Gazette*, London, who is the discoverer of sanitas, says:

“1. Oxygen (a non-poisonous substance) acts as a germicide to all micro-organisms classified by Pasteur as anaerobies.

2. Peroxide of hydrogen (a non-poisonous substance) has been proved by my own investigations to act as a germicide to micro-organisms that originate putrefaction, and my results were subsequently confirmed by Guttman and Froenkel. They were also confirmed by Mr. M. M. Hamlet, who observed that of all the many chemical substances he examined, peroxide of hydrogen acted most fatally to bacterial life. Further proof of the germi-

cidal character of this substance has been given by M. Baldy, and emphatically by M. M. Paul Bert and Reynord. Sanitas in all its forms contains or yields peroxide of hydrogen.

3. Thymol can scarcely be called a poisonous substance, and it is admitted to be a powerful germicide. Sanitas contains thymol.

4. It does not follow that, because a chemical agent is non-poisonous to man, it will prove harmless to micro-organisms. There is nothing in common between the other two."

This paper has been republished in the *Dental Cosmos*, page 757, *et seq.*, for December, 1884. I agree with Mr. Ringyett as to the value of sanitas. My method of using sanitas is to let it precede the entrance of a drill into the pulp chamber when I am opening it. The rubber dam is in place; I do not allow saliva or other liquid or solid to gain entrance to the pulp canal before it is bathed in sanitas. The putrescing pulp or its remains is removed under copious dressings of the oil. Instruments are dipped into it previous to cleaning the canals. After all debris has been removed the roots are packed loosely with cotton moistened in it. The cavity is sealed with gutta percha, through which two or three minute openings are made for the escape of any gas accidentally enclosed in the canal or beyond its apex, where there is a blind abscess. The dressing is removed in four or five days, previously adjusting the rubber dam. The roots, if not already clean, are cleansed thoroughly, and they are redressed. After the expiration of a week the dressing is again changed and the roots stuffed with shreds of cotton, wet with sanitas. In another week the roots are usually ready to be filled permanently; if not, the same treatment is pursued as previously outlined. You are in no danger of inciting an acute abscess if the treatment has been carefully followed step by step. Those operators who dread to open into a pulpless tooth, with no fistulous outlet except through the canal, may by first cleaning the sac at the apex of the tooth with H_2O_2 , proceed with sanitas and have no other evil results, if they will practice with efficient medical agents and use intelligence and judgment.

Cannabis Indica.—For a very short period I have been experimenting with the tincture of *Cannabis indica* of the strength of ten ounces of the tops of the plant to alcohol one pint. So far I have succeeded in removing one pulp after a saturation of it

for five minutes. I have also excavated several cavities, very sensitive, by using the tincture as above. The pain of cutting seemed to be less intense, and did not produce much discomfort to the patient. I allow it to remain in the cavity for several minutes and then proceed as usual. I call attention to it at this time only to induce others to experiment in the same direction.

COCAINE.

BY J. S. CASSIDY, M.D., D.D.S., COVINGTON, KY.

[Read before the Mississippi Valley Association of Dental Surgeons, Cincinnati, March 5, 1885.]

SO MUCH has been printed lately in regard to cocaine and its salts, that I almost hesitate to call the attention of this association to the subject.

When Nieman, in 1860, first fully described the active principle of the leaves of *Erythroxylon coca*, the alkaloid did not receive much attention from the medical world, although the leaves of the plant had been, from time immemorial, the chief source of delight to the Peruvian Indians, as a mild masticatory nerve stimulant.

Biddle, in his *Materia Medica*, edition of 1883, mentions the discovery of the alkaloid *cocaiana*, but prefers the fluid extract, as the best preparation for coca, and indicated only in diseases requiring the checking of tissue waste, as in phthisis. Its effects on man are described as producing cerebral stimulation, lessening the feelings of fatigue, hunger, and thirst; increased cardiac action, and elevation of temperature; lessening the excretion of urea, and finally dilation of the pupil, which latter effect by the way, suggests the non-interference by the drug with the sympathetic nerves. So much for its internal physiological influence.

Its use as a local anæsthetic, first publicly exhibited by Dr. Koller of Vienna, a few months ago, has given it such celebrity in all branches of minor surgery, that each one of us must recognize its importance, and give it a fair trial in our own department. With this object in view, and with the hope of exciting discussion by presenting the results at this meeting, we selected a four per cent., aqueous solution of cocaine chloride.

Case 1.—Unmarried female, of lymphatic temperament, aged about 25 years, presented both superior centrals with proximal

cavities of white variety, dentine extremely sensitive. Made two applications of the solution and in about ten minutes, found the dentine almost devoid of sensibility.

Case 2.—Superficial anterior proximal cavity, third inferior molar, in a man about 40 years old, sanguine temperament, addicted to chewing plug tobacco. He would *not* submit to the torture inflicted by the excavator; had recourse to our pet, three consecutive times, at intervals of about five minutes, with no apparent benefit whatever. Was failure in this case due to the saturation of the part with nicotine?

Case 3.—Youthful patient squirming with the pain caused by adjusting clamp; applied cocaine solution freely, and worked as heroically as before, the patient showing no evidence of suffering.

Case 4.—Female aged about 20 years, nervous temperament, first superior bicuspid presenting near the neck a carious anterior proximal surface, extending nearly half way across the labial surface. The hypersensitive condition of the part indicated the use of an obtunder. After three applications of cocaine, the patient declared the excavating did not hurt in the least.

Case 5.—A partially devitalized pulp was bathed effectually with the (in this case so called) anæsthetic, and no decrease whatever in sensibility seemed to result.

Case 6.—Male, 35 years old, nervous sanguine temperament, anterior proximal cavity in upper bicuspid, of common variety in color, depth, and position, and labial small cavity in neck of first lower bicuspid. The dentine in each so tender that he appeared to suffer absolute torture by my effort to excavate. Made one application of cocaine solution on cotton wool, and let it remain perhaps twenty minutes, while I repaired a filling in one of his molars. My patient was a thorough scientist and had no confidence in the efficacy of the drug; but when I again began cutting with bur and drill and excavator, his enthusiasm in its favor, knew no bounds, and I am positively sure he suffered little or no pain.

These are but a few examples of similar experiments—with successes more than less—sufficiently suggestive, and warranting the question: are the virtues of cocaine, as a dental anæsthetic dependent in any way on the temperament or idiosyncrasy of our patient; or, are its numerous failures due to some unknown local conditions that are able to resist its obtunding influence?

Dr. Betty, of this city, in the February number of the *Register*

says, that vascularity seems to be an essential condition, and that its effectiveness is due to its ability to cause anemia; but Dr. Arnold, of Ironton, in the same number of the *Register* presents several instances of complete anæsthesia of dentine by its use.

It would seem, therefore, that it must act on non-vascular tissue by a direct paralyzing effect on the peripheral sensory material or would it be more in accordance with present histological views, to attribute the loss of sensibility to a change in wave motion, either an increase or diminution of the normal vibration in the nearer portion of the mass of protoplasm? It is evident at all events, that inasmuch as no cauterizing effects are produced, the expectation of employing it with invariable success on sensitive dentine, or even vascular tissue, must oftentimes meet with disappointment.

Some other than an aqueous solution of the chloride, or perhaps some other salt of the alkaloid—as for instance the *oleate* has already gained some reputation—may be discovered to answer all the requirements of the dental surgeon. Experiments will be made in this direction and even though they fail, we will still have the original preparation, which I believe, if patiently manipulated, can prove as great a blessing to us, as it has already to the oculist.

Perhaps I ought to conclude this short paper at once, but feeling as I do that cocaine will hold a brilliant and permanent position in materia medica, I am constrained to respectfully suggest that we should cease calling the compound with hydrochloric acid, a hydrochlorate. The credit that I expected to receive by suggesting the proper name, has, however, been already appropriated by several writers in several scientific journals, received a few days ago.

The last edition of the U. S. Pharmacopœia, unfortunately, when referring to salts of hydrochloric acid, drops the time-honored, though meaningless “muriate,” and adopts in its stead, the old, disused, and misleading “hydrochlorate.”

Although Prof. Atfield uses in this connection, the word hydrochlorate, his definition of the manner in which salts are named, contradicts his own rules of nomenclature. For instance, he says, “a salt whose name ends in *ate* contains a *compound* acidulous radical, whose name ends in “*ic*”; and again “a salt whose name ends in *ide*, contains an *element* for its acidulous

radical." And "the acidulous radical of hydrochloric acid (H Cl) is chlorine (Cl)" ergo the names of all salts of hydro-chloric acid should end in *ide*. On the other hand, the salts of chloric acid (H Cl O_3) properly terminate in *ate*, inasmuch as their acidulous—or electro negative—radical (Cl O_3) is not a single element, but composed of two elements.

If the prefix "hydro" must be retained because of the salt being an "addition" product,—or of direct union between the alkaloid and the acid ($\text{C}_{17}\text{H}_{21}\text{NO}_4, \text{H Cl}$) without substitution of hydrogen, as in the action of a metal on an acid, the same rule should apply to the salts of alkaloids with other mineral acids; we would thus have morphine *hydrosulphate*, ammonia hydro-nitrate, etc.

It is obvious, therefore, that the prefix "hydro" is not necessary to distinguish the "addition" salts of hydrochloric acid, any more than for the corresponding salts of the other mineral acids, and in order to have uniformity in this regard, the former should be termed "chlorides."

The *Popular Science News* uses the name cocaine *chloride* without any explanation therefor; merely as a matter of course; and the *Drug News* also consistently leans that way, but proposes *hydrochloride* as a convenient compromise between the two extremes. At any rate, if the termination *ate* be misapplied thus, which it is, according to all rules of chemical terminology, we undoubtedly should avoid it; and besides, some of us may discover extraordinary virtues resulting by combining cocaine, or some other alkaloid, with chloric acid, forming a compound whose right to be entitled a *chlorate*, or *hydrochlorate*, cannot be questioned, and if the name be already improperly given to another, our proposed new remedy must suffer the disadvantages said to accompany those who do not know their own names."

MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

Discussion on NEW REMEDIES FOR THE TREATMENT OF ORAL AND DENTAL DISEASES.

[Reported for the JOURNAL.]

REPORTER: Does eugenol do away with the odor of iodo-form?

DR. A. W. HARLAN: Almost entirely.

DR. WILL TAFT, Cincinnati: Cocaine is of very little use for obtunding sensitive dentine. On the soft tissues of the mouth I have found it valuable, especially in taking impressions; by painting the soft parts with it, nausea is prevented.

DR. C. M. WRIGHT, Cincinnati: Would like to ask if *Cannabis indica* can be classed with cocaine in its physiological action?

DR. HARLAN: Cocaine belongs to the class of stimulants which includes tea and coffee. *Cannabis indica* is a powerful narcotic. Some one, in England, has tried to patent the use of the tincture of *Cannabis indica* for the painless extraction of teeth. For all such gentlemen I have the profoundest contempt. The method is to add to a certain quantity of water a weak tincture of the *Cannabis indica*; heat it and the beaks of the forceps; dip the beaks in the hot solution and extract quickly. The imagination of the patient, with the aid of the drug, may lessen the pain. A few minutes after its application to a pulp (the bulbous portion of which had been destroyed) I succeeded in removing the pulp without pain. A lady patient informed me that the teeth in the anterior region were very sensitive. I applied the rubber dam to the six anterior teeth and made an application of *Cannabis indica* to cavities in the laterals while I prepared cavities in the other teeth. I then excavated the cavities in the laterals, the decay was deep-seated but did not expose the pulps. The patient did not feel any pain, but the imagination may have aided the drug. I think if we could get the active principle, *cannabin*, the results would be the same as from cocaine. I have experimented with caffeine, theine, etc., in the hope that they might be found useful in dentistry. The alkaloid cocaine is soluble 1 part in 704 of water. The salts are more soluble. We can't get a very strong solution in water. Mr. Merck seems to think that the citrate of cocaine made into a paste, gives the most satisfactory results. In extracting an inferior third molar, took a rope of cotton nearly as thick as length of crown, saturated it with a 4 per cent. solution and laid it around the neck of the tooth, holding it there ten, or perhaps, twelve minutes. I extracted the tooth without pain. Ten, six and four drops have been injected into the inferior dental foramen. The injection of the ten drops deadened the whole side of the face. Injected in the vicinity of the mental foramen it seems to act upon only the anterior teeth.

DR. F. W. SAGE: What precaution do you take, in extracting, to prevent the fluids of the mouth from diluting the drug?

DR. HARLAN: Hold a napkin about the tooth. In painting the gums I have been uniformly successful with a 2 to 4 per cent., solution. A solution of cocaine in eugenol cannot be used upon the gums because of the pain caused by the eugenol.

DR. H. J. McKELLOPS, St. Louis: I want to impress you with the necessity of attending the meetings of dental societies, where we hear from those who have made these things a study. The profession at large by staying at home miss more than can be told. Money is well spent in coming to these meetings.

I get the best results from cocaine applied by preparing it in this way: $1\frac{1}{2}$ grs. of the crystals dissolved in chloroform and alcohol each $\frac{1}{2}$ 3. In a case of extraction I applied the fluid extract of *Cannabis indica* on cotton around the tooth. Made two or three applications in from five to ten minutes and directed the patient to rinse out the mouth with the fluid extract. Then extracted the tooth without pain.

Correspondence.

"I charge you that this epistle be read."

IRREGULARITIES OF THE TEETH—A CASE IN PRACTICE.

BY GEORGE W. KEELY, D.D.S., OXFORD, OHIO.

THE removal of the first molars for the purpose of regulating teeth is a matter of no small importance. No teeth play a more conspicuous part in preserving the *contour of the face*, unless it be the cuspids. I never saw a case where the removal of the cuspids was indicated, nor do I ever expect to; neither have I ever seen a case in which I would remove the first molars, if they were all sound, and in a healthy condition. But with one or more badly decayed and broken down, and the patient under 15 years of age, the case is wholly different. Often the removal of a molar from one side will cause the anterior teeth on that side to

fall back, and greatly mar the contour of the features. Patients under 12 years of age, with the anterior teeth much crowded, and having defective first molars, where there is a question as to saving them permanently, it is good practice to remove them.

Many of our little patients between the ages of eight and ten have very defective first molars, which should be extracted, even where there is no appearance of irregularity. In not one case in a hundred will the second molars come forward with any indication of tilting.

The following is the case of a girl aged 12 years :

Her mother's teeth were very much crowded, having a high roof and V shaped arch. Three of her first children had the same oral deformity. The other two had well developed dental arches like their father's.

This Miss was the youngest child. She called to have the first inferior molars extracted. They were badly decayed, and abscessed. As it was a case where the extracting of the four first molars was indicated, I made an application to the aching teeth, and sent her mother a note, telling her what I could do to improve the irregular condition, if she would give me control of her daughter, and that there should be no expense for the operation. My patient's first call was on Monday evening, on her way from school, and she was told to come on the following Saturday to have her teeth extracted, but unlike many who dread such an operation, she called the next morning, and the molars were removed, and her heroism won my respect. It will be seen by fig. 1, that the superior cuspids are outside of the arch, and the inferior anterior teeth are much crowded, the four second molars are just making their appearance, but are not in contact. (This model was taken a few days after the removal of the molars.)

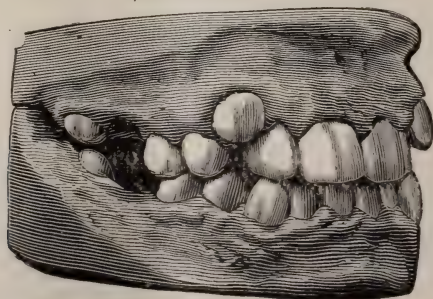


Figure 1.

The first inferior molars were in such a condition that it was a question of doubt as to treating and saving them permanently. The first superior molars were only slightly decayed, and could have been saved, but had this been done, the first bicuspid must have been removed, to let the cuspids down in place, or the superior arch would be thrown out of proportion; and had we saved the inferior molars, it would have been necessary to expand both arches; and it is no easy task to move pulpless teeth any considerable distance and hope to see them become firm, even after being held in position for years.

In this case, we desired to see what "Dame Nature" would do to regulate all the teeth after the molars were removed.

In a short time we found that the second molars were coming forward so rapidly, that it was necessary to wedge all the bicuspids back, in order to give room for the irregular anterior teeth to fall into line, this was done with compressed pine wood wedges.

Nothing further was done except fitting a vulcanite plate, bearing hard on the superior bicuspids to expand them about one eighth of an inch to complete a perfect antagonism.



Figure 2.

The improvement can be seen in figure 2, taken two years after the molars were removed, showing both the superior and inferior teeth in line. The spaces made vacant by the removal of the molars was fully $\frac{3}{8}$ of an inch. The second molars and second bicuspids are now in contact and *without any tilting*; and the superior bicuspids in the last model are over $\frac{1}{8}$ of an inch wider apart (measuring from right to left on palatine surface) than in the first.

The forward movement of the second molars will cause the

earlier eruption of the third ; and as they will have ample room, they will be far better developed, and consequently more useful than otherwise. Give the third molars "elbow room" and they will be as good as the others.

My patient's pretty face has been made beautiful. This case paid me better than any one I ever treated, first by the mother's appreciation, and by the young girl's remark to a mutual friend, that she was preparing herself for a teacher, and she hoped some day to be able to remunerate me for my services.

IS DENTISTRY A DISTINCT PROFESSION.

EDITOR *Medical Record** :

AN editorial in the *Medical Record* for February 28th, entitled "Is Dentistry a Distinct Profession," suggests a few inquiries and statements having some bearing on that question. It would be worth while perhaps to formulate a definition or description of what constitutes a "Profession," and see whether it could be so worded as to include physicians and exclude dentists. If you will refer to the history of dental education, you will find that before Dr. Chapin A. Harris, who was himself an M. D., founded the first dental college that the world ever saw, he had exhausted his powers of persuasion in the endeavor to induce some medical college to undertake the special instruction of such students as desired to practice dentistry, and only when he found it impossible to accomplish that did he reluctantly proceed to found a dental college as a separate institution. Now that dentists have succeeded in obtaining for themselves in their own schools, the medical education necessary to the intelligent and successful practice of their profession. It is only an exhibition of arrogance or bigotry to deny either the fact or the scope of such education for no better reason than that the institution happens to be called a "Dental" instead of a "Medical" college.

It is entirely a mistake to use the word "Absurdity" in reference to the establishment of an ophthalmological college. It is merely a question of convenience or necessity, and if there were one medical college that should so fully provide the means

*Sent to the *Medical Record* the week following the appearance of the editorial in that journal, but it has not before appeared in print.—ED. JOURNAL.

for special instruction in ophthalmology as to obtain all the students who intend to practice that specialty and should after a while get no students except such, there would not be found any to dispute the claim of its graduates to be called professional men or medical specialists, provided the college still retained the word "Medical" for its front name, and did not change it to "Ophthalmological College."

The foundation of a medical education is a knowledge of what may be called the medical sciences, anatomy, physiology, pathology, chemistry, etc. The scope and thoroughness of instruction in these *general* subjects, is essentially similar in both medical and dental colleges. In some institutions the dental and medical students attend the same lectures and pass the same examinations in all these studies. In other places many of the instructors are medical graduates, and not a few are now or have been, professors of the same departments in medical colleges. No college can teach quite everything in two years' time, and to this foundation of general knowledge, the medical college seeks to add such special instruction of various sorts as may furnish the best attainable preparation for the general practice of medicine. The dental college seeks to do the same thing with reference to the special practice of dentistry. The dental students are required to spend as much time and to work as hard before graduation as are medical students.

It is improper to describe the course of study in dental colleges as a "short cut" for the making of a specialist in medicine unless it is claimed that dentists must spend at least one year more in preparation for practice than is required of physicians. This would, no doubt, be desirable, but is not practicable, and cannot be made a condition of professional recognition or standing, for the reason that the scope of knowledge and training required for the practice of dentistry is not so much greater than that necessary for medical practice as to require so much additional time in preparation.

A student may obtain in a dental college an education for the successful practice of dentistry as a medical specialty which is as complete and thorough and as well adapted to the end in view as is the education obtained by the students in medical colleges for the end they have in view.

The attempt to describe the "dental profession" as composed

of two classes: those who have come into it from the mechanical trades on the one hand, and from the medical profession on the other, is not justified by the facts. Most of the former do not belong to the dental profession at all, any more than quack doctors belong to the medical profession, and neither profession can get rid of its quacks in any State where there are no laws to prevent them from getting into practice. Those who have come from the medical profession are comparatively few in number and have no reason and seldom show any inclination to assume airs of superiority as to professional character or ability over those who have obtained their training exclusively in the dental colleges, and this latter class are the ones who by their numbers and their professional standing and influence determine the character of the dental profession at the present time, and by them must be judged. It is the fault of the medical profession that we were obliged in the first place to establish our own schools and grant our own degrees, and for the sake of their reputations for intelligence and fairness they should find out by this time that dental colleges are teaching something besides a trade.

D. D. S.

CHICAGO, ILLS.

A FIBROUS TUMOR, FROM AN ACCIDENT.

EDITOR JOURNAL:—George M——, a young man of this place, came into the office, last July, saying something was the matter with his mouth, what, he was unable to say. Now, could his dentist give him any light on the matter?

Diagnosed: Fibrous tumor, having its origin in the peridentium. It occupied the space between the second and third superior molars, of the left side, extending out a considerable distance on the hard palate. The third molar was very loose, and could be moved posteriorly the width of its crown. It was so loose as to interfere in mastication.

Both teeth were removed, and then it was very apparent that the beginning of the growth was at the apex of the palatal root of the second molar, afterwards involving the remaining roots.

The history, as near as I can ascertain, is this: Some five months previous to his coming to the office, he fell from his bicycle, (i. e. took a header) striking on the side of his head and

left shoulder. The fall was a severe one, as he was unconscious for several hours. He noticed the next day that the upper teeth on the *left* side were *very sore*, but the soreness soon passed away. About eight or nine weeks after, while picking his teeth, he discovered a small growth, which bled profusely after being touched. After it became so large as to interfere with mastication, his dentist *cut it off* even with surface of the gum. In a short time it was larger than ever, and the case came to this office. When the tumor was removed it was about the size of a large filbert.

The cause was evidently the forcible striking of the jaws together, when the gentleman fell. At this writing the mouth is in a healthy condition.

P. N. BARKER.

WELLSBORO, PA.

COCAINE.

[WE are not sure the following from Prof. Morgan was meant for publication. It is so good, and so full of information on an obscure subject, that it must get into print. It has been unavoidably delayed, but is good yet.—EDITOR.]

My Dear Dr. Watt:

I appreciate most highly the kind and complimentary mention in your February JOURNAL. As you guessed, the notice was by a non-professional man, but was a plain statement of facts. I have used it, (the cocaine), that is, I and my son, in some forty cases, with varying results. For lancing gums or alveolar abscesses, every case has been without pain. In extraction about one-half have been painless; and a few cases, about one tenth, seem to have been total failures. In the other cases it seemed variable, being least efficient in cases where there was alveolar abscess. Except 1 dram, we have used the oleate, 5 per cent., solution, and have waited generally from 10 to 15 minutes after applying, before operating. Am inclined to think a stronger solution would be more efficient. When the fluids of the mouth can be excluded, I dry the gums and apply first upon the surface. As soon as it benumbs this, I use the hypodermic syringe,—that is, for extraction. I pass the needle beneath the periosteum and discharge the contents immediately on the outer plate of bone. I have been much the most successful when I injected beneath the surface.

If the fluids of the mouth are much in the way, as is usual on the lower maxillary, I rely solely on injections. A few cases of hemorrhage occurred, more than is usual in my practice, but this may have been a mere incident.

I have strong confidence in the anæsthetic properties of this drug, and in its uniform action, and attribute the failure in my hands to want of skill and knowledge to apply properly. And this I do not doubt will be overcome at no distant day. I have never applied it but to one pulp.

W. H. MORGAN.

NASHVILLE, TENN., Feb. 18, 1885.

THE ROBINSON REMEDY.

EDITOR JOURNAL:—I suffered for a number of years from a disease of the teeth, "Rigg's disease," and during the time tried many remedies, receiving only temporary relief. About one year ago Dr. J. A. Robinson applied his remedy composed of carbolic acid and caustic potash, and the first application gave me relief within six hours, and resulted in a permanent cure.

Since that time I have seen the remedy applied in a variety of cases, resulting in a permanent cure in nearly every case from the first application. Whatever this remedy may do for a "cat's ear" I have no hesitancy in stating it will do no harm to the gums or teeth, if applied as directed.

W. A. GIBSON, M.D.

JACKSON, MICH., March 6, 1885.

JAMAICA DOGWOOD.

EDITOR JOURNAL:—After searching the JOURNAL thoroughly, I think there is one anodyne that has been omitted, viz: *Piscidia erythrina*, commonly called Jamaica dogwood. It is one of the anodynes the dentist cannot well afford to be without. In neuralgia, if administered in doses of eight drops, at intervals, it soon affords relief. It is, I think, almost a *specific* in this malady. A pledget of cotton saturated in the dogwood, and applied in a carious tooth, soon gives relief. In fact, in any of the earliest stages of inflammation, it is excellent.

If this is of any interest to the readers of the JOURNAL that have not given the dogwood a trial, I will feel amply paid for a few minutes writing to the profession.

E. L. ASHTON.

TRAVERSE CITY, MICH.

REMARKS.—The JOURNAL has more than once called attention to the fluid extract of the Jamaica dogwood in dental therapeutics. The first use made of this medicine was to relieve pain caused by dental periostitis; and in this form of toothache it acts promptly and gives great satisfaction. The action of a single dose is prolonged through a period of several hours. We cordially give space to the above, as we think the remedy does not yet receive the attention it deserves.—EDITOR.

ADJUSTING THE RUBBER DAM.

IN answer to E. S. Shaw (2nd case), page 587, Dec. 1884, of the JOURNAL. Adjust the dam in the usual way, then with an instrument made for the purpose (to be had at any dental depot), press the gum down below the cavity and hold in that position during the operation. The fillings of gold should be of non-cohesive or soft gold as it is not good practice to mallet cohesive foil against the cementum. I prefer to fill such cavities with gutta-percha as it does as well or better than gold and has the advantage of saving pain. A patient seldom returns to have another gold filling inserted in this position. It is a good plan to slightly cauterize the gum over these cavities before applying the dam. Such cavities can often be filled with gutta-percha without the use of the dam if the gum is first cauterized.

D. A. A.

Editor's Specials.

"Write the Vision and make it plain."

THE EDUCATION OF DENTISTS.

JUST how dentists are to be qualified for practice is a question apparently not yet settled. It does not seem to agitate the minds of the laity, but dentists are divided in sentiment, and physicians

incline to think that any who are to be concerned in the care of living organs should be educated just as physicians are. We are always ready to admit, even to advocate the position that all such ought to—must, indeed, have a medical education. But when this is admitted it does not follow that they must be educated in medical colleges as now conducted. These thoughts have been suggested by an editorial article in the *Medical Record* which may be found in the compilations of the April number of the JOURNAL. This seems to set forth that if dentists claim to be professional men, and especially if they claim that dental surgery is a specialty in medicine, they must be not only medically educated, but educated thus in medical colleges. This might be maintained with a greater degree of consistency if it were true that medical colleges, as at present conducted, give the special instruction essential to specialists.

Let the reader bear in mind that we have no dispute as to the necessity of a medical education being desirable and even necessary, but we claim that, if not already in existence, colleges are possible that will better prepare a man for the practice of dental surgery than any medical colleges now in existence can. The *Record's* article is not now before us, but we understand that it maintains that such medical sciences as anatomy, physiology, pathology, therapeutics, chemistry, etc., should be learned from the medical schools, or the student must remain but partially educated as compared with the medical student. We do not think the *Record's* conclusions are legitimately drawn from its premises.

Let us consider. Let us reason together.

In accord with "the very truth most pure," we can say that all education is partial—fractional. No student acquires all the knowledge pertaining to any science which he studies. Whether he wills it or not, his attainments will be found fractional. So, if he can not grasp and retain all, is it not best that he acquire and hold the ideas and principles most essential to the practice of his profession? As the teachers can not impress on the minds of the pupils all there is of each science, is it not best for them to insist on the attainment of the thoughts most practical, most useful? Take as an illustration the department of anatomy. Two young men, of equal talents and attainments, undertake its study. One is to practice general surgery, while the other wishes to become a

dental surgeon. The teacher is himself a general surgeon, and he teaches accordingly. On the textures found in the hernial region he is very careful and minute. He may devote two lectures of an hour each to the external oblique muscle, as one of our teachers did, and he may gallop over the muscles of the face in a single hour, as the same teacher did with us. Is this the best possible teaching of anatomy to a student of dental surgery? We have used an extreme case, that came under our own observation, when a medical student, to illustrate the principle; but we think nothing can be plainer than the fact that a teacher of anatomy who knows that his class of students are going to practice special, and not general surgery, can adapt his teachings to the wants of the specialists, without any sacrifice of thoroughness.

The principle we have tried to set forth in reference to the science of anatomy, applies with equal force to physiology, pathology, therapeutics, etc. And if colleges adapted to and affording such special teachings, without any narrowing of the mental training involved, are not already in existence, they can readily be provided.

Whatever has been done can be done, ordinarily. We have heard a great variety of teachings in both medical and dental colleges; and we are forced to decide that the most thorough teachings of anatomy we ever knew occurred in a dental college. And we can say the same of physiology and pathology. But even if they had not been quite so thorough, they would have been more profitable to the dental student, from the fact of their adaptedness to the wants in his course of study.

The history of dental surgery gives much light in the solution of the question before us. The teeth were always important parts of the body. Unless they are kept healthy, the whole constitution is impaired. They are an important element of beauty. They are essential to distinctness of speech. Some of their morbid conditions inflict the sharpest pain known to humanity; yet all through the ages, even up till within the memory of the now living, they were and have been almost ignored by the medical profession. At the time we first attended lectures in a medical school, the profession of dentistry was scarcely known. It was so little thought of, that the physician was consulted in reference to the teeth one hundred times for each time a dentist was consulted. And after this we engaged in the practice of medicine in a very

populous part of a State, and the nearest dentist to us was twenty-five miles distant. He lived eastward from us, while westward it was fifty miles to a dentist, southward about seventy-five, and northward—we didn't know of any. If any were there, they were beyond our geography. But now, come back to those lectures: With nearly all the responsibility for the care of the teeth resting on the medical profession, as the above statement demonstrates, the professor of anatomy spent less than an hour in teaching us all that we learned from him in reference to them, while the professor of surgery spent just an hour, most of the time exhibiting and telling us how to use instruments that should never have had an existence.

We belong to the medical profession, and glory in the fact; yet we advise our medical brethren to be moderately modest when speaking of the education of dentists; for it is a fact, that cannot be disputed, that the first dental college established, in the first ten years of its existence, did more to advance the knowledge of dental surgery than all the medical colleges had done from the dawn of letters till that date.

It is ever to be borne in mind that the early dental colleges were established because the medical colleges could not be induced to give the necessary practical instruction in dentistry. And the men who organized them laid their foundations deep and wide in the basal medical sciences. And the early teachers of these foundation sciences were the peers of those teaching the same in the medical schools of the cities in which they were located. We might demonstrate this by allusion to the names of some of these teachers, but memory might fail to do justice by omitting even some of the most eminent. In the one dental college with which we have been best acquainted, we have listened to as thorough teachers as ever we heard in medical schools. All will admit that Drs. Jesse Judkins, Wood, Kearns and Clendenin could teach anatomy; and that Drs. Mendenhall, J. B. Smith and their successors could teach pathology. These are named simply as samples of the kind of men selected to teach in the dental colleges.

By all means let the dentists be medically educated. But as stated at the beginning of this article, it does not follow that they must be educated in medical colleges.

MISUNDERSTOOD.

It is almost certain that we have been unfortunate in the use of words, in giving our views in reference to tin as a material for filling teeth. Even our good friend Dr. J. A. Robinson, has failed to understand us, and that gives greatly increased evidence that we have not spoken and written clearly. In his article read at New Orleans, he says, "Prof. Watt tells us that tin and gold are more antiseptic when combined than tin alone; also that the antiseptic qualities are increased by corrosion."

We shall try once more: Tin, in its metallic state, we regard as medically inert, and therefore not antiseptic at all. Some of its combinations with other elements may be, and probably are antiseptic. This property especially pertains to the chloride of tin, which is the compound most likely to be formed in the mouth, even though all corrosion of this metal in the mouth is usually spoken of as oxidation. If this view is correct, the antiseptic property is all due to corrosion. And it is well recognized that if two metals, in contact, or connected by a conductor of electricity, are placed in a corrosive fluid that acts unequally on them, or acts on but one of them, the more readily corroded one is rendered positive, and therefore the corroding agent acts on it with increased energy, the corroding elements such as oxygen, chlorine, etc., being recognized as electro-negatives. It is only on this principle that tin is more corroded when in contact with gold than when it is alone in the corroding fluid. If around the margins of a tin filling a little chloridation takes place, the organic portion of the dentine is prevented from such rapid decay as might otherwise occur, and this, in connection with the compressibility of tin, explains why it is such a valuable material for filling the teeth of children.

Now, if our readers will carefully study this short special, we think it will rectify most, if not all of the mistakes into which we may have unintentionally led them. Bear in mind, please, that tin, in its metallic state, is probably inert; that in the mouth it is more likely to be acted on by chlorine than by other agents, and that chloride of tin tends to arrest incipient decay at the margins of the cavities.

Long ago it tried our patience to be misunderstood. We have learned that we have not attained to a perfect use of the English language, and are accordingly more modest.

GLORYING IN HIS SHAME.

ACCORDING to an exchange, a correspondent of the *Cleveland Leader* is responsible for the statement that there is an old dentist in Washington, D. C., "who boasts that he has pulled 100,000 teeth by actual count." We are glad he is old; for the old must die soon. The correspondent tells us that he is "a dirty looking fellow." How could he look clean after such dirty work. The old fellow told the correspondent that "the molars I have pulled will fill several bushel baskets, and their bone-dust would make the largest garden rich." With the dust of the incisors, cuspids and bi-cuspids added, he might even retrieve the character of the garden of Gethsemane. He claims to have pulled "the first pearl-like product of the year-old baby." and "the crumbling tusk of the nonegenarian." Herod killed the babies; but here is a wretch who brags of having mutilated them and left them to linger in their misery.

Stand up! You "lean and miserable," hollow, hungry-eyed, dyspeptic, old mutilator,—stand beside, no—in front of this row of humanitarian dentists who have saved hundreds of thousands of the beautiful gems which you boast of destroying! Can you look them in the face? Possibly you can; for probably all sense of shame, all signs of a conscience have long since left you.

Now we shall wash our pen and try a clean subject.

DELAYED.

DOCTOR WAYE's article in this number was received in time for, and should have appeared in our April number; but from no fault of his, it had to be held over. It has not spoiled, and we hope and expect that the doctor will find the time and a way to favor us with other articles.

HOW TO RENEW THE PACKINGS OF A SYRINGE.

WHEN the leathers become so hard as to be unpleasant, wash them with soap, apply fresh machine oil, and rub them with toilet soap, after dipping it into water. They will work as nicely as new ones.

Societies.

"Wherewith one may edify another."

THE MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

[Reported for the JOURNAL.]

THE forty-first annual session was held in the lecture room of the Ohio Dental College, Cincinnati March 4, 5 and 6, 1885, President, Wm. Van Antwerp, Mt. Sterling, Ky.; Recording Secretary, A. G. Rose, Cincinnati. About fifty members were in attendance. Among those present we noticed H. J. McKellops, St. Louis; A. W. Harlan, Chicago; W. Storer How, Philadelphia; A. Berry, E. G. Betty, Frank Bell, B. Bettmann, J. G. Cameron, M. H. Fletcher, Frank A. Hunter, N. S. Hoff, O. N. Heise, C. H. James, G. S. Junkerman, W. D. Kempton, James Leslie, H. L. Moore, E. Osmond, R. J. Porre, A. G. Rose, C. H. Rosenthal, H. A. Smith, G. W. Smith, F. W. Sage, J. Taft, C. R. Taft, Will Taft, A. Taft, J. I. Taylor, C. M. Wright and others, Cincinnati; A. F. Emminger, Columbus; C. I. Keely, A. T. Good, Hamilton; J. R. Callahan, Hillsboro; Otto Arnold, Ironton; G. W. Keely, Oxford; Richard Corson, Middletown; A. O. Howe, Washington C. H.; W. R. Hale, Wilmington; J. S. McCampbell, W. H. Sillito, Xenia; A. O. Rawls, Lexington, Ky.; Wm. Van Antwerp, Mt. Sterling; J. S. Cassidy, J. M. Clyde, Covington; H. A. Beamer, Cynthia; A. B. Harriman, Lawrenceburg, Ind., and others.

The meeting was a profitable one, and more papers were presented than could be read. Due praise should be accorded the

Chairman of the Executive Committee, Dr. Betty, for his untiring efforts to make the meeting a success.

The subjects discussed were: 1. Progress of Dental Education. 2. Recent Theories concerning Caries of the Teeth. 3. New Remedies for the Treatment of Oral and Dental Diseases. 4. Improvements in Prosthetic Dentistry. 5. New Methods and Materials for Filling Teeth.

The following papers were presented: Progress of Dental Education, three papers, by Otto Arnold, A. Berry and R. J. Porre; Assimilation of Food, by W. D. Kempton; The Development Hypothesis, by C. M. Wright; Some New Remedies, by A. W. Harlan; Cocaine, by J. S. Cassidy; Pyorrhœa Alveolaris, two papers, by A. O. Rawls, G. W. Smith; A Protest Against Quackery, by G. D. Billings; The Inadequacy of our Resources in Operative Dentistry, by F. W. Sage; Textile Foil, by E. G. Betty; Prosthetic Dentistry, by J. R. Callahan; The Predisposing Causes of Dental and Oral Disease, by Wm. Van Antwerp. These papers will appear in the *JOURNAL* and *Dental Register*, beginning with the April numbers.

The first part of the afternoon session of the second day was taken up with the exhibition by Dr. W. S. How, of a new battery for the electric mouth lamp and the electric mallet. It consisted of four square carbon cells, varnished on the outside to prevent leakage, and connected at the top by hard rubber plates perforated over each cell to receive the small round rods of zinc. When not in use the zincs are removed to a hard rubber cup in the center of the battery. The method of coupling the cells is very simple, and the battery is a good thing if it has staying qualities.

Dr. H. J. McKellops exhibited the Bonwill mechanical mallet for the dental engine and the Bonwill hand-piece. Also some paper disks having a rim of sand paper one-quarter inch wide glued on one side for finishing fillings at the cervical margin—the invention of Dr. Smith of Rhode Island. In regard to the Bonwill mallet, Dr. McKellops regarded it as better than any other, and he had experimented with the electric mallet and various batteries. The mechanical mallet is always in order and ready for use. A filling can be almost finished with it, even in proximal cavities, but you must have suitable pluggers, points and an engine with an arm that will not weigh down the mallet; the weight of the cable is objectionable. Have used the mallet about

three years; do not think it perfect and expect improvements to be made in it.

J. E. Morton, Brookville, Ind., and W. D. Phillips, Cincinnati, were elected to membership.

Dr. F. A. Hunter, the Treasurer, reported as follows:

Balance, last report, (corrected),	\$20.34
Rec'd for dues, since last report,	39.00
Bills paid, since last report,	25.50
Balance on hand,	33.84
Bills were afterwards ordered paid to the Janitor,	5.00
Recording Secretary,	15.00
Corresponding Secretary and the Executive Committee	
for printing, stationery and postage,	11.09
Total,	\$31.09
Reducing the balance to	2.75

The officers elected to serve for the ensuing year are:

PRESIDENT.—A. F. Emininger, Columbus.

FIRST VICE-PRESIDENT.—E. G. Betty, Cincinnati.

SECOND VICE-PRESIDENT.—Otto Arnold, Ironton.

RECORDING SECRETARY.—A. G. Rose, Cincinnati.

CORRESPONDING SECRETARY.—W. D. Kempton, Cincinnati.

TREASURER.—F. A. Hunter, Cincinnati.

The President appointed the following standing committees.

EXECUTIVE.—M. H. Fletcher, C. H. James, H. L. Moore, Cincinnati.

PUBLICATION.—J. Taft, O. N. Heise, Cincinnati; J. S. Cassidy, Covington, Ky.

MEMBERSHIP.—F. W. Sage, Cincinnati; J. S. McCampbell, Xenia; J. R. Callahan, Hillsboro.

ETHICS.—C. M. Wright, Cincinnati; J. M. Clyde, Covington, Ky.; G. W. Keely, Oxford, O.

On motion of Prof. H. A. Smith, it was

Resolved, Having learned that Prof. George Watt, one of the older and most efficient members of this Association, is confined at home by sickness, the members desire to express regret at his enforced absence; also to convey to him sympathy in his affliction and express the hope that he may soon recover and be able to resume his accustomed professional work.

Adjourned to meet the first Wednesday in March, 1886.

CHICAGO COLLEGE OF DENTAL SURGERY.

THE third annual commencement exercises took place at Hershey Music Hall, Friday March 27, 1885.

The number of matriculates for the course of 1884-5 was sixty-two; graduates twenty-two.

The degree of Doctor of Dental Surgery was conferred on the following:

H. Austin Armitage, M.D., England; Harry Leon Barnum, M.D., Wisconsin; Edward Everett Cady, Illinois; Warren Cary, M.D., Illinois; Jesse Austin Dunn, Illinois; Astor Gerard Gray, Illinois; Rudolph Theodore Hasselrüs, Denmark; Joseph Hickey, Dakota Territory; John Edward Hinkins, Illinois; A. Melville Hudson, Canada; Charles Nelson Johnson, L.D.S., Ontario; William J. Johnson, M.D., Illinois; Edmund Lambert, Illinois; Asa Holt Lane, Illinois; Charles William Lewis, Illinois; Archibald Stuart McCandless, Illinois; Joseph Donahey Moody, Illinois; Amos Jedd Nichols, Illinois; Charles Putnam Pruyn, Illinois; Joseph J. Reed, Illinois; Charles Henry Wachter, Maryland; George W. Whitefield, Illinois.

The honorary degree of D.D.S. was conferred upon E. B. Call of Peoria, Ill.

SOUTHERN DENTAL ASSOCIATION.

THE seventeenth annual meeting was held in New Orleans, La., March 31, April 1, 2 and 3, 1885. A number of interesting papers were read and discussed. We expect to print one or two of the papers in this number of the JOURNAL.

The officers elected were *President*, W. C. Wardlaw, Augusta, Ga.; *First Vice-President*, B. H. Catching, Atlanta, Ga.; *Second Vice-President*, J. R. Knapp, New Orleans, La.; *Third Vice-President*, E. R. Hanner, Galveston, Texas; *Corresponding Secretary*, E. S. Chisholm, Tuscaloosa, Ala.; *Recording Secretary*, R. A. Holliday, Atlanta, Ga.; *Treasurer*, H. A. Lawrence, Athens, Ga.

Executive Committee.—W. H. Morgan, Nashville, Tenn., G.

F. S. Wright, Columbia, S. C., W. H. Richards, Knoxville, Tenn.
Adjourned to meet in Nashville, Tenn., on the fourth Tuesday (25th) in May, 1886.

NORTHERN OHIO DENTAL ASSOCIATION.

THE twenty-sixth annual meeting will be held at the Tod House, Youngstown, Tuesday and Wednesday May 12th and 13th, 1885, commencing at 10 A. M. Tuesday.

A cordial invitation to be present is extended to the profession.

Subjects for discussion: 1. Dental hygiene. 2. Treatment of diseased teeth, gums and pulps. 3. Pathology of alveolar abscess. 4. Effects of zymotic diseases upon the teeth.

H. F. HARVEY, *Cor. Sec'y*,
Cleveland.

INDIANA STATE DENTAL ASSOCIATION.

THE twenty-seventh annual meeting will be held at Lake Maxinkuckee, commencing Tuesday, June 30, 1885. The State Board of Dental Examiners will also meet at same time and place.

R. W. VAN VALZAH, *Sec'y*,
Terre Haute, Ind.

CHICAGO DENTAL SOCIETY.

AT the annual meeting held Tuesday, April 7th, the following officers were elected for the ensuing year.

President, C. F. Matteson; *First Vice-President*, G. W. Nichols; *Second Vice-President*, W. A. Stevens; *Recording Secretary*, A. W. Hoyt; *Corresponding Secretary*, P. J. Kester; *Treasurer*, E. D. Swain; *Librarian*, J. H. Wooley.

INDIANA DENTAL COLLEGE.

THE sixth annual commencement of the Indiana Dental College was held in the College lecture room, Indianapolis, on March 4, 1885. There were twenty-seven matriculates during the term.

The degree of D.D.S. was conferred on the following graduates :

Wm. C. Archer, Indiana; Wm. H. Bucher, Indiana; Frank Dowd, New York; John E. Davis, Indiana; Wm. R. Dunn, Indiana; Fred. H. Emmerling, Wisconsin; Frank H. Horner, Pennsylvania; Marshall M. Keep, Pennsylvania; B. G. Miller, Michigan; James W. Prall, Indiana; J. Monticello Sprinkle, Indiana; Geo. W. Tainter, Missouri; Gust. Weinmann, Pennsylvania.—*Dental Cosmos*.

KANSAS STATE DENTAL ASSOCIATION.

THE fourteenth annual meeting of the Kansas State Dental Association, will be held at Topeka, commencing Tuesday May 5.

Every effort will be put forth to make this meeting an interesting and profitable one to the profession, and to this end every dentist in the State who is interested in the advancement of dental science is cordially invited to be present.

The meeting will be held in the Senate Chamber, State House, beginning Tuesday morning and continuing over Wednesday and Thursday.

C. B. REED, Secretary,
Topeka, Kansas.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

THE third regular meeting of the National Association of Dental Examiners, was held in Tulane Hall, New Orleans, on Tuesday, March 31, 1885.

The State Boards of Ohio, Indiana, Illinois, Michigan, Georgia, Louisiana, South Carolina, Kentucky, Mississippi and Maryland were represented by the following gentlemen :

J. Taft and H. A. Smith, of Ohio; S. T. Kirk, of Indiana; A. W. Harlan and Geo. H. Cushing, of Illinois; J. A. Robinson and A. T. Metcalf, of Michigan; G. W. McElhaney and J. H. Coyle, of Georgia; J. S. Knapp, L. A. Thurber, O. Salomon and J. R. Walker, of Louisiana; G. F. S. Wright, of South Carolina; A. O. Rawls, of Kentucky; A. A. Dillehay, R. J. Miller, W. T. Martin and W. H. Marshall, of Mississippi; Richard Grady, of Maryland.

The greatest harmony prevailed in their deliberations, and

after the fullest consideration the following resolutions were adopted:

Resolved, That this association recommends to all State Boards of Examiners that registration should be made with both the Examining Boards and the Clerks of the County Courts.

Resolved, That this association thinks that all examination of candidates by State Boards should be conducted principally in writing, and that a record of such examinations should be kept by the Secretaries of the Boards.

Resolved, That in the opinion of this association, a diploma from a reputable dental college should be considered as the only evidence of qualification for those who seek in the future to enter the dental profession, and that we recommend to all State Boards to secure, at the earliest practicable moment, the amendment of existing laws so as to attain this end.

Resolved, That the appropriation, by any person, of any title or appellation to which he is not justly entitled and by which deception and fraud may be practiced is, in the opinion of this association, highly reprehensible, and should be prohibited by legal enactment.

Resolved, That this association deems it undesirable that State examining boards should be composed of gentlemen serving as professors in dental colleges, and recommends to the appointing powers of all States that, so far as may be possible, the places of such professors, when their terms of office expire, be filled by those not holding such positions.

The association adjourned to meet in Minneapolis on the first Tuesday in August, 1885.

GEORGE H. CUSHING, Secretary.

MAD RIVER VALLEY DENTAL SOCIETY.

THE annual meeting will be held at the Phillips House, Dayton, Ohio, Tuesday May 19, 1885, commencing at 10 o'clock A. M., one day only.

The subjects for discussion are: 1. Dental economics. 2. Different materials for, and methods of filling teeth. 3. Treatment of pyorrhœa alveolaris. 4. Cases in practice.

All are cordially invited.

ISAIAH SMITH HYATT of Newark, N. J., died in Florida, March 18, 1885, aged 55 years. He was the joint patentee with his brother John W. Hyatt, in the invention of celluloid about twelve years ago.

Books and Pamphlets.

HARRIS' THE PRINCIPLES AND PRACTICE OF DENTISTRY.—Including Anatomy, Physiology, Pathology, Therapeutics, Dental Surgery and Mechanism. Eleventh edition. Revised and edited by FERDINAND J. S. GORGAS, A. M., M. D., D. D. S. 994 pages. 750 Illustrations. Price, in cloth, \$6.50; leather, \$7.50. Philadelphia: P. Blakiston, Son & Co. For sale by Ransom & Randolph, Toledo.

This splendid book is undoubtedly *the* work on modern dental practice and reflects great credit on its editor—we are tempted to say author, for it is virtually a new work by Prof. Gorgas.

We have carefully examined the thousand pages and find little or nothing in them to criticise. Of course, it would be impossible to write a book of this kind and expect all to agree with its author in his conclusions, especially in a profession with such a diversity of opinion among its members as is revealed in the discussions of our dental societies.

Every reader of the JOURNAL should own a copy for reference, if not for study. We copy from the preface: "New matter now inserted has brought the work fully up to the time of its publication. Obsolete theories and processes, together with unimportant details, have been omitted, and more useful matter substituted. The aim of the editor has been to meet the demands of the present advanced state of dental science."

The new matter added includes: "The Development of the Bones of the Head and Face; Temporo-Maxillary Articulation; Description of Mucous Membrane; The Origin and Development of the Teeth; Analyses of Tooth Structures; Secondary Dentine; Dentition; Calcification and Decalcification of the Teeth; Alveolar Pyorrhœa; Aphthous Stomatitis; Thrush; Sanguinary Calculus; Malformed Teeth; Effects of Syphilis upon the Dental Structures; Caries of the Maxillary Bones; Sensitive Dentine; Theories as to the Cause of Dental Caries; Treatment of Dental Caries; New Methods, Materials and Instruments Employed in Filling Teeth and other Operations; Electric Mouth Lamp; Electric Mallet; Dental Engines and Attachments; Rubber Dam Appliances; Treatment and Appliances for Correcting Irregularity of the Teeth; Contour Fillings; Replantation and Transplantation of Teeth; Different Methods of Inserting Artificial Crowns on Natural Roots; Bridge Work; General and Local Anæsthetic Agents; Improved Forceps; New Materials and Trays for Impressions; Articulators; Blowpipes; Furnaces; Celluloid; New Apparatus for Vulcanizing Rubber and Moulding Celluloid; Repairing Vulcanite; Duplicating Dentures; Theory of Vulcanizing; Regulators; Gold Alloy and other Cast Bases; Temperament in Relation to Natural and Artificial Teeth; Improvements in Porcelain Teeth; New Splints for Fracture of the Jaws;" etc., etc., etc.

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

VOL. V.

JUNE 1, 1885.

No. 6.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

PYORRHOEA ALVEOLARIS.

BY A. O. RAWLS, D.D.S., LEXINGTON, KY.

[Read before the Mississippi Valley Association of Dental Surgeons, Cincinnati, March 5, 1885.]

A QUESTION is not to be questioned, when all agree; but many dissenters may quickly evolve the truth. A brief review of the opinion of others, relating more especially to doubtful points in connection with this disease, will probably assist our researches and better enable us to sift the facts from the tangled mass of diverse expression.

When notice of this disease as one distinct from other inflammatory lesions of the oral cavity was first brought prominently before the dental public, scores, aye, hundreds of the profession had observed as its cause only the deposition of salivary calculus, and naturally enough the great burden of their evidence favored the theory that its origin was strictly local. But from the time Dr. Rehwinkel, of Chillicothe, and myself, saw fit to oppose this view of its causation at a meeting of the American Dental Association in Chicago, the opinions have very materially changed,

and to-day finds the number of advocates of the local and systemic theories pretty evenly balanced.

The local cause theorists are at variance in their opinions as to whether the cause be of this or that nature, some claiming salivary calculus as its origin, a limited number sanguinary calculus, and still others whose observations so far lead them to the belief that the affection is resultant from "a peculiar organism or fungus growth which always fills the pockets."

To Dr. Riggs, of Hartford, I think much is justly due for the impetus given to the investigation in this matter, and I look upon him as the pioneer of the local-origin theory. If I am not misinformed, Dr. Riggs claims that salivary calculus is the immediate cause with no remoteness about it, and his treatment, so far as I have been able to discover, is certainly consistent with such view, besides being, in my estimation far superior to the local treatment resorted to by either set of theorists. Dr. Ingersoll, of Iowa, has given evidence of the fact that he is a searcher for the truth at the bottom, announcing the theory of sanguinary calculus as a cause, stating that often when no salivary deposits were present, the sanguinary calculus would be found far up the roots of the teeth, which I think correct, but would prefer the term serumal calculus. Dr. Black, of Illinois, presents the latest local-origin theory in support of which, and confirmatory of his microscopic investigations, he has the results of similar research at the hands of Dr. Witzell, of Germany, whose article bearing upon the subject was previous to Dr. Black's. This is one of the numerous germ theories and is founded upon the fact of the presence in these cases, of little hot-beds of peculiar organisms or fungi, which, according to supporters of the theory, cause a melting away of the pericemental membrane; by what means is not definitely understood but presumably by the "digestion fluids of the fungous growth, causing a re-molecularization of tissues exposed to their action."

And now in behalf of the subject from another standpoint and as I understand it. The characteristic symptoms and signs of this much dreaded malady are somewhat varying in their nature. The progress of the disease also differs in accordance with formation of the parts, habits of the patient, environment, nature of cause, and whether the latter be hereditary or acquired. The incipient symptoms are by the casual observer seldom noticed

as such, simply for the reason that they are in their expressions somewhat analagous to those occurring in pericementitis or sub-mucous irritation from ordinary causes. Dr. Black says the disease is first rendered apparent by a red line at the border of the gum and asserts his belief in this as a constant first symptom. Now, while this may be true as it refers to occasional first apparent signs, it is according to my observation no part of the truth as it refers to first symptoms. First symptoms are not seen; they are felt. About the earliest subjective symptoms is either a sense of fullness or a feeling of impactedness in the vicinity of the teeth involved. That there should be a difference in incipient symptoms in different cases or varying localities in the same mouth is probably on account of difference in the shape of the teeth, the direction of contact and point of initial lesion. The above symptoms are usually followed by more or less soreness and springy feeling under delicate percussion, the soreness gradually lessening as the disease progresses until the lesions become so extensive as to admit the action of deposited irritants, when it returns and abates alternately as the parts are relieved by cleansing and depletion or congested by close contact with irritating deposits. Following these primary symptoms come the more pronounced (though of difficult detection) objective symptoms and signs. The first of these is not "a red line at the border of the gum," but a slight prominence or thickening at that point, with no perceptible change in color from that normal to the part. In not a few cases the foregoing manifestations are successively present, and no deposits of a calcareous character to be seen or felt, and occasionally not even a disruption of the tissues at the neck of the tooth or teeth thus implicated. At this phase of the disease the "red line" may follow, though generally not until there has been present a slightly bluish or purplish tint which is indicative of increased size of the capillaries, congestion, and carbonization of the blood at the point referred to. This color passes away with disruption of the tissues implicated and is gradually replaced by a more angry looking red line, though not always; especially is it not so when the lesion exists between the teeth. Following these symptoms and signs, the dissolution of continuity goes on between gum and tooth, the objective symptoms become more marked with the influx or deposit of additional irritants and in turn the periosteum at the margin of the

process or over the septa between the teeth is laid bare and subjected to the exciting causes of dissolution which had induced its exposure. The destruction of peridentium advances toward the apex of the root, the pericementum melts away, there is a breach in the round of nutrient circulation that had once supplied the alveolar border, and the work of disintegration proceeds in the wake of decreasing nutrition. Shortly after the process begins to soften, the external indications will vary in different cases. There may exist a dark turgidity of the gum, or in its stead a more or less bluish red line showing the depth and direction of the dissolution; this latter only when the attack is on the posterior or anterior surface of the root. Again, neither of the foregoing signs may be present and nothing but a slightly raised, thickened, and loosened condition of the gum at its margin to indicate anything wrong. When the latter signs obtain, especially if but little pus can be pressed out, it is usually indicative of greater integrity of tissue, and if occurring in cases of heredity, records a decline in the system of the remote cause or predisposition.

The points which are usually first attacked are those that might naturally be affected, namely, where there exists the greatest amount of gum tissue with the least of external contact or exercise, and about the openings of the ducts of the several salivary glands. This, it is true, gives color, more or less, to the local cause theory, of which, more anon. Other points of attack are such as may result from peculiarly shaped or irregularly placed teeth in different parts of either or both maxillæ, such as molars or bicuspidis that have pressed forward or been pushed backward out of position; broad, square-crowned molars and bicuspidis, with very narrow necks, showing depressions, either longitudinal or transverse; lateral incisors standing in from the line of arch which the position of the cuspidis would indicate; broad cutting-edges and narrow necks of the incisors. The twisting or malposition of any one or number of the teeth which would favor the existence of an area of soft tissue comparatively unexercised, either by the act of mastication, by the tongue, muscles of contiguous parts or efforts at cleansing.

As previously stated, the progress of this disease varies according to formation of parts, habits of the patient, environment, nature of cause, and whether the latter be inherited or

acquired. We have just observed how much the formation of parts affects their susceptibility to initial lesions; so, in like manner does it influence, more or less, the direction of destruction as well as the rapidity with which it takes place. In cases where the alveolar ridge is thin from posterior to anterior surface, the progress of the disease is likely to be continuous in one direction, viz., from the point where the process is first denuded of its membrane directly toward the apex of the root. Although the attack in such cases occasionally takes place on the anterior or posterior margins of the border, it is of more frequent occurrence upon the septum between the teeth, often giving evidence of little or no breaking down of the septum, but destroying the pericementum in a straight line toward the end of the root. Should the septum also be very thin between the teeth involved, and especially if this condition be present nearly the length of the root, it would be comparatively tenacious of life and slow to give way,—this arising probably from the fact of its greater density as compared with a thicker septum, and, if the disease attacked but one side from its close association with anastomosing nutrient currents of the adjoining tooth. Upon the other hand, should the process be heavy, square, thick, and of considerable depth, a different action may be looked for, in this, that the progress of disorganization will be of slower approach in a direct line toward the end of the root, and much more rapid upon the entire superficial area of the intervening septum; but while the latter is succumbing to the disease, the anterior and posterior plates of the process will remain standing for a much longer period of time.

The gums in such instances, especially if the patient be ordinarily cleanly about his teeth, will, particularly in the vicinity of the molars, bicuspid, and superior incisors, drop in over the borders of the posterior and anterior alveolar plates, thus presenting a flattened or somewhat squared aspect, with open depressions between the teeth. Again, in case the alveolar ridge is of extraordinary width, and at the same time of but little depth, the destruction of bone proceeds in about the same manner as in the foregoing case, but if it proceeds from the septum, it compromises much more readily the anterior and posterior attachments of the teeth, and *vice versa* if proceeding from the latter points. Instead, however, of the gum becoming depressed between the teeth, as in the foregoing instance, which similar thickness of the

process would lead us to suspect, it seems to fill up the space caused by disintegration of the underlying bone, and still retains about the same relative position to the necks of the teeth as in health, and yet presents a more generally inflamed appearance. You will observe, so far as the process is concerned, that in all of the above cases the principal action of the disease is upon the more spongy, consequently less resisting, structure between the anterior and posterior plates of the process. When beginning on the process between the teeth, the wasting away continues in various ways mentioned until the outer plates are reached, which latter have thus far, under the nutrient supply of tissues external and still intact, held their own, but must now, with the advance of the enemy upon the territory of their life current, go the way of the less resistive tissue they once enclosed and of which they were a part.

That daily conduct or habit of the patient has much to do with influencing the progress of this disease is certainly evident to all who have any knowledge whatever of its characteristics, and although effects thus arising may be scarcely noticeable in their bearings upon the predisposition, they evidently must, according to all physiological law prevail. The effects of habit, however, to increase or lessen the amount and impress of local irritants are readily seen. Irritants of any nature tend to increase the demolition of parts, especially those parts denied the protection of their natural covering; hence scrupulous care in freeing and keeping free such parts, of substances so acting, will retard in a degree the destruction that would otherwise ensue. Again, if patients are accustomed to wholesome outdoor exercise such as more frequently induces the desire for good, substantial food, consequently insuring abundant and vigorous exercise of the jaws and teeth, the disease will progress much slower than if, on the other hand, they subject themselves to close confinement indoors and live almost entirely upon soft, pultaceous diet. As an evidence that this matter of exercise on the parts involved is an important factor in the management of the malady, witness the difference between cases where tobacco is constantly chewed and those where it is not, or the difference in the progress of the disease about the teeth in the same mouth, it always being less on the side most in use. Possibly the narcotic properties of tobacco may to some degree lessen the intensity of the trouble, but I

apprehend the differences apparent are due more to the mechanical effects in exercising and cleansing the teeth of food, rather than to any therapeutic action of tobacco *per se*.

To express to you the opinion that environment has much to be responsible for in connection with this condition may seem like going beyond the legitimate pale of inquiry ; nevertheless, if my observations go for anything, environment has in a degree laid the foundation for the disease in question. It has caused conditions which have in some manner led to the use of mercury to ptyalism by thousands of our people. In the early settlement of each State as the "star of empire westward took its way," so indeed did the blight of mercury hold its sway, and the children of these people whose principal remedial agents for almost every hidden or serious ailment were antimony, mercury, and blood-letting, are to-day, under the laws of heredity, more or less victims of parental environment. Again, it may appear strange to you that chloride of sodium, an article of seasoning, will, under certain to me unknown conditions of the system, produce similar if not identical symptoms in the oral cavity as may be found resultant from the use of mercury. You ask what has this to do with environment ? Well, go and make inquiry of the people who dwell amidst the swamps and marshy lowlands of malarious districts, question and notice those who are subjects of malarial poison and learn for yourself their cravings for, and extraordinary use of salt, and then observe the result upon the oral tissues. Should you conclude that other influences, such as the presence of miasmatic germs afloat in the atmosphere, have caused the lesions you will find in many mouths, then I ask you to investigate the cases of the common sailor on the high seas, whose diet consists largely of salt meats, and you may be satisfied that salt is a factor in the production of this disease. If still in doubt, extend your researches to the common Irish laborer on our public works, who has been in this country for several years, and find there the effects of a long use of briny meats. Not only does it seem true that malarial districts are among the favorite places to note the inception of this scourge, but the very atmosphere of the surroundings is abundantly fruitful of germ-life, and the gaping wounds or lesions of any character, whether pyorrhœa alveolaris or otherwise, will not be the less gaping for their influx, to say nothing of their offspring, in such a habitat as would be their lot

in not a few mouths. Generally speaking, the acquired conditions resulting either from the use of mercury or salt are slow to manifest themselves. The effects of the former may indeed quickly produce ptyalism, but the objective symptoms of the latter soon pass away, especially if the patient be of vigorous constitution, and no signs, characteristic of the disease, be present for several years; but as time creeps on gradually the signs become apparent, and by the time a number of years, varying, according to unknown influences, from ten to thirty have passed, and the destruction so continues until the teeth loosen and are beyond redemption.

The majority of cases of which I now speak, you will find among people who have passed the meridian of life, and on up to old age; seldom, if ever, in youth or early manhood. And how often do you hear the children of these afflicted ones say, "Why, father is sixty-five years of age and hasn't a decayed tooth in his mouth," and then reflectively adding "but his teeth are awfully loose." Indeed, the children are right; for decay seldom, if ever, takes place in the teeth of persons so affected, and if perchance it existed before these conditions were acquired, it seems to have stopped right there and remained in *statu quo* through life. But mark you the difference. Under the laws of heredity these conditions of the parent are transmitted to the offspring, and the signs and symptoms are apparent in childhood and youth instead of old age. If, however, a child is born to these parents before the conditions are acquired, no indications of the disease will be present, but, on the other hand, and as sure as laws of heredity obtain to mark the features or color of the eyes and hair, so certainly will the youngest children get the effects in the receipt of the self-same conditions more than do the elder ones. When inherited and in the first transmission, the disease is much more difficult of control; the tissues of the parts of less integrity, melting rapidly away, and the attack usually more precipitous, uniform, and general throughout the mouth, though the gums of young patients retain their position comparatively well about the necks of the teeth long after the cancellous bony structure of the process has wasted away. The varying progress of the manifestations arising from the two different causes I believe to be noticable. True, however, I have not met with and studied a sufficient number of cases attributable to each cause to be quite so well

founded in my belief upon this point as to admit no doubt ; but such experience as I have had leads me to the conclusion that the disease growing out of a transmitted mercurial taint progresses with greater rapidity than if occurring from the use of chloride of sodium.

And now concerning the treatment. First, allow me to remind you that from time to time you have heard what some have pleased to call mere assertion to the effect that pyorrhœa alveolaris could not be cured by the removal of calcareous deposits or local treatment unaided. Indeed, you may have heard me deny the possibility of a cure when the case was well developed and typically marked as such ; and before proceeding further let me say that, from my standpoint, there is a vast difference between typical and non-typical cases. To me a typical case is one in which mercury in some shape or chloride of sodium has been a causation of conditions which have rendered possible the local manifestations, regardless of tartar, fungus or other external irritants,—conditions which have their age and place of local evidence the same as any predisposition, may grow into dyscrasia and bloom out into local symptoms and signs in accordance with the character of the parts so predisposed. Granting you that some of these cases in their earliest stages, before much bony tissue has been involved, and especially when the disease has been acquired, or, upon the other hand, exists in the second or third generation from its origin, can be checked or cured for a time, we will proceed with remedies.

Within the past decade, almost every month, dental societies have discussed the different wonderful specifics for “Riggs’ disease,” and our dental journals have regularly fed the hungry masses with allopathic doses of each and every new one. All kinds of powerful antiseptics have been on trial ; germicides, parasiticides, escharotics, caustics, etc., are still in wholesale use. These may be of service in their time and place, but after all is said and done there is but one principle upon which all local—*local*, I say—treatment should be based, viz., that new tissue will not grow upon dead tissue. In other words, broken nutrient continuity must have protection against substances inimical to the establishment of embryonic tissue.

Of the cases coming under the care of dentists the majority of them have passed the primary stage, and the alveolar process

has been more or less involved in the gradually advancing destruction. Under these circumstances, the first thing to be accomplished is the most thorough removal of all deposits of a foreign nature from about the necks, crowns, and roots of the teeth to the process. To do this completely and to assist in the operation which follows it often becomes necessary, in order that you may have room for the entrance and exit of instruments, to incise or split the gum slightly over or in the vicinity of the parts to be operated upon. Especially is this required when the lesion exists between the teeth, and the septum is much broken down, for the chances are that the bone here will not be reproduced, and by spitting the gums from external to internal aspect, you are not only enabled to work with more ease and certainty, but when the work is completed the gum will more readily drop in over the parts operated upon, thus shielding against foreign substances what reformation of tissue may take place. During the operation it is proper to syringe well the parts with tepid salt-water, mixed with which may be any one of the good antiseptics now in common use. About as good as you will find for this purpose is Listerine which combines the qualities of an antiseptic with that of a stimulant and does not perceptibly coagulate albumen. When reasonably assured that the teeth are well cleansed, your attention should next be directed to the removal of all disintegrating and lifeless bone. How easy to say and yet how seldom accomplished! Indeed, this is often a very difficult and painful operation, not only to perform, but doubly so to ascertain when it is complete. Months, even years, of experience, a steady hand, delicate sense of touch, a cool head, and a thorough knowledge of the parts are required. Aside from this, you must be able to tell by the touch of an instrument the difference between the dead and living process.

There are but few instruments made that are well adapted for use in this operation. The ordinary scaler, while suited to the removal of calcareous deposits from about the teeth, is by no means of good form for the removal of dead bone. Six or seven different instruments will be sufficient. Of these, two should have scoop points of different sizes, two right and left curved chisel points, two sickle-shaped blades and one should be a small, slightly curved, sounding instrument.

As in the preliminary operation, the use of the syringe may

occasionally be continued after the removal of all lifeless bone; and sometimes before it; teeth much loosened from their sockets should be ligated with waxed silk to their fellow teeth. Following this operation, an antiseptic in solution with tepid water may be thoroughly used about the teeth; but as for strong escharotics, caustics, and such like preparations, especially on pledgets of lint or cotton to be left in the pockets for hours at a time, I think it entirely contrary to our best conceptions of the laws governing the reproduction of tissue. If the operation has been complete, and the parts freed by syringing and by the flow of blood from the debris resultant therefrom, then all has been done that can be of any avail so far as you are concerned. Other duties devolve upon the patient. On the other hand, should the operation not be complete, all the caustics, escharotics, antiseptics, germicides, and parasitocides known to ancient or modern times, in full strength, in solution, in crystals, in granules, amorphous or otherwise, on cotton, lint, or silk, will be of as little use as an attempt to have the surgeon's flap unite over a necrosed bone. What is needed after the operation is protection of the parts, and to my mind nature's own protection, a clot of blood, is far superior to anything else.

The patient, as previously stated, now has his duties to perform. He should be instructed to keep the teeth scrupulously free of food, to gently manipulate the parts by rubbing and pressing the gums with thumb and finger, using the pressure inward toward the parts from whence bone has been removed, and after the soreness of the work has passed away, to use some kind of chewing gum, that the teeth and contiguous parts may be kept in gentle exercise.

In conclusion allow me to present a few questions still at issue, which deserve investigation if we desire a correct knowledge of the etiology of the ailment.

First, do all persons who have deposits of salivary calculus about their teeth present the true characteristic signs and symptoms of this disease? If not, why?

Second, is the disease infectious? If so, why have so many of the human family escaped its ravages through centuries of contact and exposure to its action; and, why are not dentists, who daily and hourly stand almost mouth to mouth with patients, so infected? Of course we expect the reply, from those who

hold to the theory of infection, that all persons are not alike susceptible to the action of forces, and that, as with all infectious disease one may be affected, and others, equally subject to the same producing causes, show no signs of infection, the difference resulting from a different systematic condition. Very well; so far, so good.

Third, is the fact that this disease runs in families more an evidence of its infectious character than of its heredity?

Fourth, is it true that a peculiar and destructive fungus finds its habitat in the lesions of this malady and cannot be found in mouths not so affected?

MISSISSIPPI VALLEY ASSOCIATION OF DENTAL SURGEONS.

DISCUSSION OF DR. RAWLS' PAPER ON PYORRHOEA ALVEOLARIS.

[Reported for the JOURNAL.]

DR. A. BERRY, Cincinnati: In a case of pyorrhœa alveolaris, it is important to look to the condition of the system and regulate it by dieting, etc. I think the disease is often caused by the excessive use of common salt.

DR. J. TAFT, Cincinnati: In the use of remedies there are a number of therapeutic principles which should guide us. If the case requires an antiseptic, get the most suitable. If a disinfectant merely, we should use the one having the proper strength. If a stimulant is wanted, how much and what kind? We must study the powers and properties of these agents to be able to employ them with intelligence. What is the mode of action of the so-called "new remedies?" Is it antiseptic, disinfectant, stimulating, astringent or any or all of these? Knowing this we have a guide for their employment.

As to pyorrhœa alveolaris, there is probably never a case that is entirely local in its origin. In a vigorous constitution, with tissues in good condition, normal nutrition and perfect elimination of waste matter, there will be but little or no systemic predisposition to the disease. If it does exist in such a system it is of a purely local character. There is a great variety of tissues—some bringing a strong resistant force to bear against disease and in

such a one there may be said to be no constitutional predisposition, but if the tissues are loose, flabby and defective—filled in with water and adipose—you have a system susceptible to any disease. The meaning of the name of this disease is pus flowing or oozing from the alveolus; this may be produced alone by local irritation which, if removed, will allow recovery to take place, usually without medication. In many cases vitiated oral secretions will be sufficient to keep up the disease. These secretions are often so vicious as to excoriate the lips when it comes in contact with them and would be a dangerous poison should we be inoculated with it.

Common salt is active in the production of scurvy. We know that it produces a condition in the tissues which prevents decomposition, hence we use it in the preservation of meats, etc. When introduced into the system it prevents the rapid solution and elimination of the debris of the body, resulting in a clogging of the system. Now if an excess of salt prevents the free and ready solution of the effete matter of the system it becomes a factor in connection with the disease. The gums seem to be the most vulnerable point of attack from salt and the mercurials.

I would like to ask Dr. Harlan, what is the peculiar action of sanitas and eugenol?

DR. A. W. HARLAN, of Chicago: Sanitas stores up peroxide of hydrogen which is a germicide for all bacteria except the bacillus anthrax. This statement is sustained by the authorities quoted in my paper. [See page 227 of the JOURNAL]. Sanitas is a disinfectant. It does not merely substitute one odor for another. I do not consider such a substance a disinfectant. Its elements are capable of combining with sulphuretted hydrogen gas and other products of decomposition and thereby destroying or removing them. It is a powerful oxidizer and astringent. It does not part with its stored up peroxide of hydrogen spontaneously but must have a call for it, so that in sanitas you have pure peroxide of hydrogen and a pulp canal dressing as well. Have opened into many teeth in which the pulps had long ago been devitalized by a blow or other accident, and no fistulous opening. In this class of cases my success has been greater with sanitas than with any other medicament. Some have said they could not accomplish anything with it. The great trouble has been a lack of care. The fluids of the mouth should never be allowed

to enter a pulp canal. I never attempt to open into a canal without first taking precautions to secure positive dryness. Some patients do not like the odor of sanitas and in such cases I substitute eugenol. That eugenol is a powerful germicide is established by several facts.

Place a mosquito under the microscope in an aqueous fluid and notice how lively he is. Now drop a small quantity of eugenol upon him and he dies at once. The contents of its alimentary canal are completely discharged and he changes color. The mosquito is of a higher type than the bacteria. Eugenol is a decided stimulant. It does not come under the head of disinfectants as sanitas does. It does not enter into combination with and break up foul smelling matter, because it contains only two parts oxygen to ten of carbon and twelve of hydrogen. It is not possible to make an aqueous solution without some other solvent—you cannot directly combine eugenol and water.

In pyorrhœa alveolaris I inject sanitas into the pockets because it remains there and is not dissolved by the saliva. Sanitas is made by floating turpentine on water and directing upon it a stream of oxygen. The aqueous solution then falls to the bottom. I disguise the odor of sanitas by adding some of the essential oils. You can disguise it by using eugenol but I prefer the oil of wintergreen because it is cheaper. The true oil of cinnamon is expensive and you will have to use a larger quantity than of sanitas, therefor I prefer sassafras and wintergreen.

As I have said, eugenol will disguise iodoform. Oil of peppermint might be used—the latter is, according to Koch, a powerful germ destroyer.

Eugenol is the most agreeable to the patient but as it does not contain peroxide of hydrogen, I prefer to use sanitas in treating pulp canals. Too many shut air into canals; this can be avoided by puncturing the gutta percha stopping which will also allow the escape of any gas that may form.

DR. E. OSMOND, Cincinnati: Have used cocaine in the treatment of pyorrhœa alveolaris. Have been enabled to remove the deposits about the roots of teeth more thoroughly because it prevents pain and hemorrhage. Usually apply a two per cent., solution at intervals of a few minutes. Do not think it is of any use in obtunding sensitive dentine. Also use it in applying the rubber dam; it lessens the pain.

IMPROVEMENTS IN DENTAL PROSTHESIS.

DR. A. BERRY: Since our last meeting I have examined a piece of bridge work in a lady's mouth, made by Sheffield of New York. It was a beautiful piece of mechanism, so far as the honesty of the thing is concerned I thought it a great imposition on the credulity of the patient—she paid \$500 for it. I think in five years the teeth to which it is clasped will be lost and the patient would have been better off had she gone to some "Cheap John" and got a \$10 set on rubber.

DR. H. J. McKELLOPS, St. Louis: I have not done any bridge work but have seen a great deal of it. That done by Dr. Patrick, of Belleville, Illinois, is very beautiful and in some cases very useful. He makes such a perfect adaptation to the gums as to press away from the part all blood so that the tissues are white when the fixture is first inserted. This soon becomes the normal condition. He takes a great deal of care in each step. Makes no dies but takes pure gold, burnishing it down on the cast.

I visited Sheffield's establishment in New York. It is a very large one. He said he expected soon to buy the whole block and turn it into a dental office. A full upper denture of his make that I saw was attached to four teeth and the man could eat anything, crack almonds, etc. One case, a lady about 70 years of age, went to Sheffield to have a piece of work done and they nearly put her in the grave. They were two months treating the mouth. She came to me to have a lateral incisor replaced. I had to put it on in the mouth because the work could not be removed. Have seen the Paris work too, but do not like it. Seems to be done without thought or care and was not artistic.

DR. H. A. SMITH, Cincinnati: A patient with a piece of Sheffield's work in her mouth, came to me to have it repaired. One of the crowns was broken off only the pins remaining. I built up a crown on the pins, using a phosphate cement. It was satisfactory but is only temporary. After a while the plate will work loose upon the teeth to which it is attached. Bridge work is objectionable because of periosteal irritation from overuse of the teeth to which attachment is made. In Patrick's method the accumulation of debris between the gum and plate would result in irritation to the mucous surface.

DR. McKELLOPS: There is no accumulation of matter under the plate, whatever.

DR. H. A. SMITH: That is a remarkable statement but I will not discredit it. It is very difficult to keep matter from under the best fitting plate. Sheffield charged \$500 for the piece of work that came under my observation, and I would not have done it for \$5000, for, from my experience with the patient, I think it would have sent me to my grave. They had a high old time, but the dentist finally got the better of the patient. The piece replaced all the superior teeth, except the cuspids, two molars on one side and one molar on the other side. The bands on the natural teeth had worked loose and irritated the tongue. I smoothed them off as well as I could but do not propose to do much with it as it must soon come off. Bridging cannot be done by the general practitioner but by some one who makes a specialty of it. The dentist cannot afford the necessary time.

DR. E. OSMOND: Any pulpless tooth or root to which a crown or band has been fitted, will, after a while, be forced out by depositions in the socket. A plate fitted like Sheffield's will be lifted from the gums by the elongation of the roots or teeth to which it is fastened. It is not permanent and will not admit of repair. I do not want any of it.

DR. A. BERRY: A dead tooth or member is a very uncertain thing. There is greater absorption where the pressure is irregular. In bridge work the liability to trouble is increased by putting more than their share of work on the remaining roots or teeth. We are not justified in putting in this work as reliable should even one case in ten be successful. A gold plate clasped to the natural teeth will give trouble in less than five years.

DR. McKELLOPS: There is no friction in bridge work because the piece is cemented to the natural teeth. A clasped plate is different—it works up and down during mastication. Have seen a piece of Low's work in the mouth of a strong man, six feet high. It was the six superior anterior teeth. He could bite off plug tobacco or do anything with them that could be done with the natural teeth. He said nothing on earth would buy them. If it brings comfort to the patient, it is what we want, but the work can be done only by some one who makes a specialty of it.

DR. F. W. SAGE: I once made a piece that was not strictly bridge work. It consisted of three front teeth on a plate fitted to the ridge and fastened with pins running up into the natural roots. It lasted about four years when the roots had to be extracted because of the absorption.

I do not think bridge work will ever come into general use—there is not enough of it to justify a dentist to undertake it. In reference to the Richmond method of crowning, I use a band suggested by Dr. C. R. Taft, of this city, which is not forced up on the roots under the gums and therefore less apt to cause necrosis of the root.

DR. McKELLOPS: Of Dr. Patrick's cases that I have seen there was no odor nor any sign of irritation under the plate. Some of the Chicago work did not look clean but there was no inflammation.

DR. G. W. SMITH: I have set about thirty pieces of bridge work during the past year, but don't know whether it was Sheffield's method or not. Had to remove about three pieces. Set eleven teeth in one case. The patient was exceedingly nervous and couldn't wear a plate. Saw the case the other day and there was no inflammation. This work can be removed by cutting the band with a bur in the dental engine. To replace it, resolder the band and cement to the tooth as before.

DR. McKELLOPS: Dr. Morrison, of St. Louis, had a patient, a lady from Ohio, with a loose lower cuspid and a missing upper incisor. Dr. M. removed the lower cuspid, dressed it up to resemble a superior incisor, with the dental engine cut a socket for it in the process, inserted the tooth and it is a success. Has been in about six months.

DR. H. L. MOORE, Cincinnati: I have, in my own mouth, a gold crown set on a live tooth which does well and makes a grand substitute. It is the right superior first bicuspid.

Subject passed.

Correspondence.

"I charge you that this epistle be read."

NOTES FROM EUROPE.

EDITOR OF JOURNAL:—As cocaine seems to interest the dental profession more than anything else at present, I feel that I must give you some of my own experience with this new, and, as I believe, most valuable discovery for the alleviation of pain in minor surgical operations.

In February last, while I was practicing in Nice, a lady came to me with a superior lateral incisor recently broken off close to the gum. The pulp was exposed, and so inflamed and painful that she could not endure touching it with her tongue or lips. She was so nervous and excitable that the mere suggestion of extirpation almost induced a nervous fit. The root was left in such shape that there was no satisfactory way of applying arsenious acid. I had just procured a four per cent. solution of cocaine, and suggested an application of it to the pulp, to see if it would deaden the pain so much that a portion of the dentine around the exposure could be cut away so as to make a place that would allow the application of arsenic with a covering of gutta-percha, hoping in this way to deaden the pulp and permit its removal.

After drying the tooth, an application of the solution was made with a small piece of spunk, which caused a little pain at first, no doubt on account of its coldness, but this pain ceased entirely in a few seconds. In five minutes I made another application, causing no pain whatever. After waiting two or three minutes longer, I put a rose bur in the dental engine and drilled directly into the pulp canal, giving no pain to the patient. After drilling into the canal about one-fourth of its length, I made another application of the cocaine, as a precautionary measure, even though the patient had felt no pain at all, after which the drilling was continued till the pulp was removed quite to the apex, and the root was prepared for a How crown. The patient declared that from first to last she had felt no pain. The next day the setting of the crown was completed, and the patient went on her way to Italy, rejoicing in the possession of a beautiful new tooth. If pulps can be thus removed without pain, a great boon has been gained for both dentist and patient. I hope others will try it, and meet with like success.

I have been trying the "Robinson Remedy" in the treatment of *pyorrhea alveolaris*, and have met with good success. The druggist prepared it for me in a liquid form. From what has been said of it in your JOURNAL, I infer that Dr. Robinson uses it in the form of a paste. I wish he would tell us which is the proper form. I have not used it for sensitive dentine, but from what Dr. Harroun says of it in the last JOURNAL, I shall try it.

Did you ever hear of sulphur as a dentifrice to prevent the

deposit of tartar? An aged English lady patient, on my expressing surprise at the absence of tartar in her mouth, told me that she had used sulphur occasionally for a quarter of a century. I have since recommended it in some troublesome cases, and think, as do the patients, that it is useful, but the period for observation is too short to warrant a positive opinion. I would like your own opinion as to its chemical action, if there is any, and as to any possible injurious results from its use.

N. W. WILLIAMS.

GENEVA, SWITZERLAND, April 27th, 1885.

“CONCERNING BILLS.”

ED. JOURNAL:—Reading the article in the April number of the JOURNAL on the above subject, I felt like asking the question, Why should the dentist do a credit business? I have had some business experience outside of dentistry and sold goods “on time.” An old gentleman, a retired merchant, used often to shake his head at us and say very wisely, “You had better mourn *over* your goods than *after* them,” which I think is true in almost all departments of business, dentistry included. The rule should be pay when you get your goods, pay when the work is done, pay when the service is rendered, “short reckonings make long friends.”

We busy dentists cannot afford to spend our time looking up the financial standing of patrons, especially while the fees received for our services are as small as they are in most offices. We might better be spending our time in study, sharpening our instruments, digging some of the dirt out of the dark corners of our office, or in recreation, or in work for the good of the public outside of our profession, than to do work and take “trust for pay.” My experience has been that dental work paid for gives much better satisfaction than that owed for, this is especially true of plate work. A set of artificial teeth made as near perfect as may be, in nine cases out of ten will not “fit” until paid for. Years ago this used to astonish me for I could not think my patients dishonest, but by careful observation I find that trust customers invariably fall into the habit of trying to see if there is not “something wrong about” this set of teeth that ought to be

"fixed" before they are paid for, so the jaw is run forward to the right, to the left, backward, and in every conceivable way to "try them," with the natural result of knocking them loose, and in some this seems to become a habit. While if paid for they would be trying to see how well instead of how badly the teeth fit. Hints from some of those of experience in the dental profession may be of service to those just beginning, but much must come from experience which may be expensive but is genuine and beneficial if one has the tact to utilize it.

W. W. SCOTT.

VICKSBURG, MICH.

WATT'S METAL PLATES.

For full lower dentures, there is nothing any better, in a majority of cases, than "Watt's Metal Plates." There is first, the advantage of *metal* in contact with the membrane; the advantage of *weight*, which is an important factor in lower dentures; the advantage of a *method* of construction, which insures a *perfect fit*; then the attachment of the teeth, with pink rubber, enables the operator to use plain teeth, for of all places to use "gum sections," the lower jaw is the most objectionable, either in securing an artistic arrangement, or a proper articulation.

My method of construction is to use pumice with the plaster, equal parts, for filling the impression and for flasking. Form a wax plate, and double the edge all around, as that gives the appearance, when finished, of a binding or rim to the plate. After casting, finish, and *spur* the surface with a graver; arrange the teeth, and proceed as with a rubber plate.

L. P. HASKELL.

CHICAGO.

THE relative numbers engaged in some of the professional callings in the United States, as shown by the census returns of 1870 and 1880, were as follows:

The number of clergymen in 1880 was 64,698 against 43,894 in 1870; the number of lawyers was about the same—in 1880, 64,147; 1870, 40,736; the number of physicians in 1880 was 86,000; in 1870, 62,000; the number of teachers and scientific men in 1880 was 228,000; in 1860, 110,000; the number of dentists in 1880 was 12,314; in 1870, 7,839. These figures are to be interpreted in the light of an increase in the total population during the decade of thirty per cent.—*Boston Medical and Surgical Journal*.

Compilations.

"Gather up the Fragments."

THE VAPORS CHIEFLY USED FOR ANÆSTHETIC INHALATIONS, AND THEIR SAFE EMPLOYMENT.

BY GEORGE EASTES, M. B., LONDON, F. R. C. S., ENGLAND.

Published in the British Medical Journal.

WITH all the caution possible, chloroform remains an unsafe agent for anæsthetic purposes, from its properties as a cardiac depressor, and should be used only when other safer remedies cannot be employed, or their use is contraindicated. It appears that of late years the mortality from anæsthetics has been steadily decreasing in England. This change for the better is probably due to the fact that other anæsthetics, particularly nitrous oxide gas, ether and the A. C. E. mixture have been gradually supplanting chloroform in professional esteem.

Its place has been taken chiefly by the A. C. E. mixture, which is equally portable with chloroform, and can be used in almost all the cases in which an anæsthetic is required. For obstetric operations and in dental cases in children I nearly always use it. In fact, armed with a drop bottle filled with chloroform and with a Skinner's inhaler, an anæsthetist is equal to most of the emergencies of his practice, and probably possesses an agent more nearly universally capable of application, with almost complete safety, than any other anæsthetic compound. The chief objection to it, perhaps, is that it is somewhat slow in producing entire anæsthesia. Wherever practicable it should be used rather than chloroform. The exhilarating effects of the three parts of ether seem to more than antagonize the depressing effects of the two parts of chloroform, so that scarcely any deaths, if any, have been reported from its use. Should syncope occur during its administration, the same measures as are recommended from such an emergency from chloroform should be adopted.

But, in spite of this strong testimony in favor of A. C. E., I am yet of the opinion that, of all the compounds hitherto employed for the production of anæsthesia none other is equal in safety to nitrous oxide gas for short operations, or the gas combined with ether, given through Clover's apparatus, for longer cases. One advantage of having the ether at hand in the apparatus ready for use after nitrous oxide is that, if in the course of an operation which beforehand seemed likely to require only gas, the surgeon should find it necessary to prolong his procedures, the anæsthetist can at once assist by admitting the ether vapor to the inhaler. When nitrous oxide is used alone, the mere removal of the inhaler suffices to readmit air to the lungs and make the countenance red once more, and to permit the brain quickly to resume its functions. In fact, the gas is such a safe anæsthetic that, although much

used by dentists, scarcely any deaths have been recorded as due to the nitrous oxide alone, without some other misadventure to explain the fatal result.

The gas being almost tasteless, the patient breathes it freely and without hesitation.

The inhaler must fit the face accurately, and permit no admixture of air through any chink; otherwise the patient may grow noisy, and then be only with difficulty anæsthetized. The rapid recovery that occurs when the gas is removed, is of course an advantage when the operation is very short, as for dental cases, but for longer operations it is a distinct disadvantage.

It is in these latter instances that the advantage of being able to continue the operation under ether is manifest.

As regards the administration of ether, some such apparatus as that of Clover is far superior to the ordinary method employed in America, in which ether is poured on a sponge stuffed into a felt cone and fitted to the face. It is possible with Clover's apparatus to administer the ether in such extreme dilution, and so gradually to increase the dosage, that (without using any nitrous oxide at all) the patient dozes off into complete anæsthesia without manifesting any sign of dislike to the process.

In the usual way of giving the gas first it is a mistake to turn on the ether tap too soon, if the patient be only semi-conscious he is apt to notice the change and to struggle for freedom.

Ether excites the heart and exhilarates the patient, in which fact probably lies much of its safety for anæsthetic purposes, and this quality, as opposed to the depressing influence of chloroform we should at all times remember. But ether at the same time causes an abundant secretion of mucus from the pharynx and air passages, rendering it an unsuitable agent when the patient has been the subject of old bronchitis. When gas and ether are used, the patient, beginning with the tasteless gas scarcely realizes that the process has begun, and goes on afterwards from nitrous oxide anæsthesia, in which, of course, the larynx, as well as other soft parts have lost acute sensitiveness, to ether narcosis, without the irritation of the larynx and the coughing that are frequently so troublesome when ether is used, except in the most diluted condition in the beginning. This is, I believe, one of the chief advantages of the gas and ether combination.

It has, happily, never been my lot to witness a death from gas or ether, nor to see more dangerous symptoms than blueness of the skin and temporary suspension of the respiratory process, for the relief of which the removal of the inhaler, together with the clearing out of the mucus and vomit from the mouth and throat, have always sufficed. I have found the pulse under all circumstances remain strong and steady, although the respirations might be feeble.

Should dyspnœa remain really urgent, the pulling out of the tongue, the immediate application of cold to the front of the chest and face, the partial elevation of the head and upper part of the body, the turning of the patient partly upon his face, so that mucus may continue to escape, and lastly, a few forcible artificial respirations, so as to expel the compound from the lungs, and to free the overburdened right side of the heart, should be tried. But if,

with all these efforts, especially if perseverance have been made with artificial respiration, no signs of resuscitation be given, I should expect the case to be possibly more hopeless than one of apparent death from chloroform; for the heart will have been overtaxed, its right side is probably engorged, and the brain has been rendered functionless by the arrest within it of venous blood. Probably no drug, except, perhaps, nitrite of amyl, holds out at this stage, if the heart have quite ceased to beat, any prospect of averting the fatal issue. But fortunately, this consummation with ether is most rare.

Generally, too, when real danger with ether occurs, the respirations cease before the heart pulsations, in which case amyl would probably be useless.

With regard to the selection of an anæsthetic, I think that those who are about to use one should endeavor to find first whether some other drug than chloroform can not be employed. As respects age, chloroform may be used almost with complete safety to young children, say, up to the age of six or seven years; thence, up to the age of sixteen or eighteen, I prefer the A. C. E. mixture. Above that age nitrous oxide gas for short cases and gas with ether for longer operations should be used in almost all cases. When, however, the patient is liable to bronchitis, the A. C. E. combination, or possibly chloroform, seems more suitable than ether alone. In tropical climates, too, where ether almost boils at the ordinary temperature, chloroform may be preferable. Again, in lengthy operations about the nose, mouth and throat, as I said before, Junker's apparatus, with the small tube, is the most useful. I believe it right to entertain almost a pious horror of chloroform for inhalation in the case of adults, and only to use it when other anæsthetic remedies seem inadvisable.

Certain general precautions should be adopted by the anæsthetist, whatever compound he may be using, of which the following are the chief:

1. The patient should have no meal (except in cases of extreme feebleness) for four hours beforehand, to avoid the tendency to vomiting. A little brandy or ammonia may be given with some water fifteen minutes before the operation if the patient be an adult, and chloroform be selected.
2. The anæsthetist should endeavor to reassure the patient by a kind, gentle manner, which may calm an agitated heart and induce easy respiration.
3. No tight-fitting garment or band should be left around the abdomen.
4. All artificial teeth must be removed from the mouth.
5. The anæsthetist should examine the heart sounds and pulse before the operation. This precaution may seem superfluous in most instances, but in a few cases may put the administrator on extra guard.
6. The patient should be put in the recumbent posture, with the head but slightly raised. This is particularly important when chloroform or any other cardiac depressor is used.
7. The anæsthetic should be applied in the manner most suitable to the vapor used, about which I have already sufficiently spoken under the heading of each drug that I have mentioned.
8. The surgeon should not commence his procedure before the patient is fully narcotized, not alone in severe operations, for many simple proced-

ures, such as the reduction of dislocated joints and strangulated herniæ, and the diagnosing of tumors of the abdomen and pelvis require complete muscular relaxation for their successful attainment.

9. It is a golden rule never to give more of the anæsthetic than is necessary for the production of sufficient anæsthesia for the operation that is to be performed. Since every extra degree in anæsthesia is an advance along that road whose extreme goal is death, the patient should be taken no nearer the dreaded end than is quite requisite, as all the steps passed have to be retracted. Besides, as the gap separating the patient from death becomes lessened, it may easily arise that in extreme narcosis one extra and apparently trivial event, which in health would be quite inoperative to cause a fatal issue, may determine the patient's career.

10. Wherefore, lastly, as the work which the anæsthetist performs depends for its successful results on such a number of nicely balanced conditions, his whole attention during the few minutes of his employment should be concentrated upon the case. He must watch the respirations, the pulse, the countenance, the general condition of the patient. He should not be observing attentively the steps of the surgeon's procedure, otherwise he may fail to notice the first sign of danger in the patient, and the life for which he is chiefly responsible, may be jeopardized before it is known that it is in peril. Moreover, the anæsthetist may rely upon receiving more than full recompense for all his care in a decreased number of mischances and a welcome table of good results.

GREEK AND LATIN IN MEDICINE.

It is to be regretted that so many medical students come to the work so poorly prepared for the reception of the good seed sown broadcast by the scientific teacher.

A preliminary knowledge of Greek and Latin is an indispensable aid in the acquisition of scientific knowledge, which only those who possess it know how to appreciate.

You should know that this most complex and wonderful of all machines, the human body, was scientifically constructed by the ancient Greeks and Romans. They seem to have a copyright on the names of the parts for all time. They simply put up, or rather pulled down, the entire machine in Greek and Latin parts, just as an Englishman puts up an engine of English parts.

Every bone, muscle, ligament, nerve, artery or vein, and the thousand and ten foramina, fissures, raphes, lines, processes, apophyses and diaphoses has each a Greek and Latin name. Next, some classic fiend has inflicted upon the genus a host of Greek and Latin parasites of uncontrollable kinds and unpronounceable names, both entozoa and epizoa. Besides all this, the stern irony of fate has covered man all over, eternally, externally and internally, with a countless host of diseases and ailments of Greek and Latin terminology.

Last but not least comes the therapist, displaying like an army with banners the countless hosts of Greek and Latin remedies.

Did you ever read Longfellow's

MORITURI SALUTANUS?

" Ah, nothing is too late
Till the tired heart shall cease to palpitate,
Cato learned Greek at eighty. Sophocles
Wrote his grand *Cepidus* and *Simonodes*
Bore off the prize of verse from his compeers
When each had numbered more than fourscore years,
And Theophrastus at fourscore and ten
Had but begun his *Characters of Men*.
Chaucer at Woodstock with his nightingales
At sixty wrote the *Canterbury Tales*;
Goethe at Weimer, toiling to the last,
Completed *Faust* when eighty years were past,
These are indeed exceptions, but they show
How far the gulf-stream of our youth may flow
Into the Arctic region of our lives
Where little else than life itself survives,
* * * * *
For age is opportunity, no less
Than youth itself, though in another dress,
And as the evening twilight fades away,
The sky is filled with stars invisible by day."

—A. D. BINKERD, M.D., in *Cin. Lancet and Clinic*.

CHRONIC INFLAMMATION.

Notes from a lecture by Prof. J. A. ALLEN, Rush Medical College, Chicago.

MEN not unfrequently declare themselves in better health after having been ill, than for a long time before, even though fever and a degree of inflammation attended during the attack. They, might be quite right in this, as degenerated tissue was replaced by new. This is in due time replaced by new growth, fresh and vigorous, provided the condition of the system was in every way favorable to the formation of new growth, for if so, this new growth would, it is fair to presume, be well calculated to carry on the function devolving upon it. I desire to emphasize upon the condition of molecular change, for this is a condition we are called upon to meet continually, in many forms of disease. Contents of engorged vessels, and thickened tissues following as a consequence, are to be taken up and carried away. We cannot successfully combat diseased conditions by adopting any empirical course of treatment. Some practitioners, who may have met with apparent success with a certain combination of remedies, used in a given case go blindly ahead using the combination indiscriminately. This is a sort of empiricism I would warn you against. Combating chronic inflammation by blistering is now quite generally out of use. It is a question worthy of consideration, whether this agent, powerful as it is, is indirectly stimulating the deep seated parts that are at fault, should be so generally discarded. The molecular changes to

which I have invited your attention, as present in all tissues laboring under chronic inflammation, and following it, can be broken in upon by using external agents, if handled with skill, when we would, with any other means, be in a measure helpless. As much as we may dislike to use the seaton, I hardly know of any remedy that will so well meet the indications in local paralysis. It seems required that we stimulate the surface, inviting the required change to go on in the parts involved in trouble. Blistering should not be looked upon as an anti-phlogistic remedy, so called by some, but as a stimulant, producing molecular change in the deep seated parts.

We should keep in mind that much of what devolves upon the practitioner is to change conditions, expecting that where changes are effected the system will carry on the process of repair, which she clearly cannot do with obstacles in the way that so often grow out of diseased conditions in the tissues. Now, in regard to using blisters in pneumonia, as is well known, they may not be followed with a favorable effect if used in the early stages, nor will the effect be as favorable if you apply your blister to a distant part, as when it is used directly over the diseased lung. The stimulation over the part involved invites the molecular change required to be effected in the tissues beneath.

As a means of overcoming chronic inflammation, it is probable that we yet hardly realize how powerful an agent ergot is. Its power of contracting the coats of the blood vessels is very great. Nux vomica is also an agent that we may look to for the same purpose. Through the specific influence of these agencies, constricting as it were, the arteries, may we not be able to abort inflammation? It is claimed by some that we control inflammation through excito-motory action. I do not favor such an idea, nor do I favor the use of the term. Our efforts should be directed with a view to energising the deep seated parts.

Clinically, we speak of the action of certain remedies as alteratives. Among these are the mercurials, iodide of potassa, and others. But some of you would say "mercury is out of use." We noticed recently where a medical man had used mercury in minute doses, with, as he claimed, a "resolvent" effect, seeming to think that the agent meandered through the various tissues, going through this one and dodging the next, when it finally brought up, within a very few hours, at the lungs, producing resolution in case of pneumonia. Now, mercurials do not act in this way. They are not out of use, because found to be of value in breaking in upon morbid conditions, and they restore by giving relief to engorged organs. They stimulate molecular change by giving relief in the manner stated.

Defective nutrition should be overcome if we would successfully treat chronic inflammation. This is absolutely necessary when the blood has been exhausted by excesses. In such cases we can accomplish nothing until we have improved nutrition.—*Cin. Lancet & Clinic.*

Editor's Specials.

"Write the Vision and make it plain."

NO NEW THING UNDER THE SUN.

"Is THERE anything whereof it may be said, See, this is new?" So wrote Ecclesiastes the Preacher, the Son of David, King in Jerusalem nearly, if not quite three thousand years ago.

With thoughts steady and intent on a principle in physiology involving the welfare of the teeth, and indeed of all living organs and functions, and with a feeling of surprise that, with all that has been said in reference to it, it receives so little attention, not only from the laity, but from the profession as well, we found still greater cause for surprise on noticing, very recently, and for the first time, that this principle was set forth, with quite as much clearness by Solomon as it has been by modern writers and speakers. The principle referred to is that the teeth must be exercised if they are to be preserved. All dentists who are faithful to their patrons, and who have the ordinary energy of manhood, press this on their patrons in proportion to their opportunities.

Dr. Neall, of Philadelphia, used to tell that, now and then, the wealthy Stephen Girard would supply himself with a barrel of sailors' biscuit, similar to the "hard-tack" of the army we suppose, remarking that "teeth are like boys; if allowed to be idle they fall into loose habits." It is not necessary to inquire if his practice was successful. All dentists know from daily observation that many mouths become unhealthy, and many teeth are loosened and lost, because the parties concerned acquire the habit of masticating with but one side of the mouth. The gums on the side not used become spongy and engorged, the periosteum loses vitality; the capillary vessels of the parts lose tone, and fail to carry forward the blood current; defective ossific matter is sometimes deposited abundantly in the sockets; the margins of the alveolar processes are dissolved and carried away; the free margins of the gums recede; and often the teeth are thus loosened

and lost even in early life. And with all these phenomena there are, and must be serious, and prostrating derangements of digestion, the nutritive functions becoming greatly impaired, while local inflammation often causes enduring and unbearable pain. It is probable that for every tooth lost by caries ten are lost in such conditions as are above described, in which the process is so analogous to exfoliation that many have claimed that such loss of the teeth is as essential to,—as necessary an accompaniment of old age, as are wrinkles or gray hairs.

Work or die seems to be a law stamped on all living organs and functions. The Hindoo devotee who holds up his hands for months, hoping to pacify his gods by his self-denial, loses the power to bring them down; and they wither and die in accordance with the penalty of the inexorable law referred to. This may be noticed again.

But while we, as a profession, have been inculcating the use of the teeth as essential to their retention and preservation, it is not probable that many of us have known or thought of how long we have been anticipated by the philosopher who “spake three thousand proverbs,” by the poet whose “songs were a thousand and five;” by the botanist who “spake of trees, from the cedar tree that is in Lebanon even unto the hyssop that springeth out of the wall,” by the scientist who “spake also of beasts, and of fowl, and of creeping things, and of fishes,” in short by the great prodigal son of ancient times who was at once the Audubon, the Humboldt, the Agassiz, the Darwin and the Joseph Cook of his day.

This man, in the book of his old age, in its closing paragraphs, gives a beautifully figurative description of old age and death; and in reference to the giving way of the dental organs, he says, “The grinders fail, because they grind little.” This is found in the marginal, which is the literal translation of the third verse of the twelfth chapter of the book of Ecclesiastes. The textual translation tells us that “the grinders cease because they are few;” but this literal translation teaches us that the quantitative allusion refers to the grinding exercise, and not to the number of grinders, otherwise teeth.

Let us try to consider this law and see if we can understand clearly the principle involved, that is the inexorable law that the grinders must grind if they would not fail; and going from the

teeth to other organs and tissues, see if we can trace the same physiological enactment that work is necessary to the preservation and continuation of existence.

And first why must the teeth work or die? Why must they fail if they grind but little?

The book we call the bible never sets up the claim to be a scientific text-book; but when it incidentally refers to science, it is absolutely sound and truthful. All science is founded on the nature of things; and as the book of Nature and that of revelation have the same authorship, it follows that their teachings cannot conflict. We may misinterpret the teaching of one or both on any point, and thus fancy we have found discrepancies. Nothing is more common than for the beginner in science to find fancied contradictions in his text books, but these become reconciled as he progresses.

Now in the most ancient of books a physiological statement tells us, when speaking of the physical body, "the blood is the life thereof," a fact which it took modern physiology sometime to recognize. We probably all concede that all our tissues are built from the blood; and we all recognize the fact that this building process in living bodies is constant, in answer to a constant demand, resulting from a like constant waste which is the result of work. When waste and repair are equal, the constitution does not suffer. The waste material is dissolved, and while in solution is carried out of the system by the emunctory organs; and the material of repair derived from the food, also in solution, is carried by the vascular system to the immediate vicinity of the points where needed. It may be fairly inferred, therefore, that the more vascular parts are the more readily repaired after waste has occurred; and, it is probably true that such tissues are more rapidly wasted under like conditions.

Now think of the teeth, and their attachments to the sockets, and the nature and structure of the attaching organ, the *periosteum*. We prefer to call it so; for we think it causes confusion to call the same man Thompson one day and Smith the next. The *periosteum* is of fibrous texture, with but slight vascularity. The circulation of blood in it must be feeble. But fortunately the natural use of the teeth in mastication greatly facilitates this circulation. In chewing there is vigorous pressure on the *periosteum*, with alternate and complete rest. The occlusion

of the jaws presses much of the blood out of its vessels, which are promptly refilled in the period of rest. And it is worthy of note that they are not refilled by a return of the same blood into them by a backward flow, but new blood, from the forward current, laden with material of repair, takes the place of that pressed out. And thus this structure is renewed and kept properly nourished, in a healthy state which enables it to give nourishment to the tooth through the *cementum*, as originally designed by the Great Creator.

On the other hand, let the teeth remain idle, or in the language of Ecclesiastes the Preacher, "grind little," as when soups, puddings and other liquid and plastic foods are mainly relied on, the intended and essential pressure on the periosteum does not take place. The texture having been formed with reference to this pressure, as to its vascular supply, and having been given but a limited supply of sensitive nerve fibers, so that it can painlessly bear the needed pressure, it follows that the vessels will not be promptly and efficiently unloaded. They will be but partially emptied. The blood in them will not go into the general circulation for oxygenation, as it should, and remaining too long stationary, of course it becomes, to a greater or less extent, stagnant or effete, and thus fails to keep up the full vitality of the periosteum, which goes into a decline till its low vitality is no longer able to resist the force of the inexorable law of "dust thou art and unto dust shalt thou return." In other words the vital force is not able fully to resist the chemical, and a retrograde change occurs, solution and removal taking place, till in extreme cases the organs lose their vital connection with the body, and become, practically, foreign substances. And thus it is that "the grinders fail because they grind little."

In the decline of the periosteum the progressive steps toward total failure or death may vary. We may find fatty degeneration; but probably the granular form is more prevalent. Practically the result is the same, loosening and loss of the teeth.

We have no sympathy with those who hold that we are becoming an edentulous race. The English speaking people live longer than they did forty years ago, and we fully believe that Americans have better teeth now than they had then.

This law of work or die is by no means confined to the alveolo-dental periosteum. No living texture is exempt from it, as

has been already intimated. The Hindoo devotee is a good illustration of muscular degeneration resulting from inactivity. And it is credibly stated that the nervous tissue involved undergoes like degeneration. A case came under our own observation illustrative of this. A youth had a very unsightly deformity on one of his hands. He kept it constantly concealed, and therefore inactive; and the result was that the will lost all control of the muscles of the arm.

It is well recognized that muscular contraction aids the circulation in the parts contracted. The capillary vessels are, to a good extent thus emptied, and even the veins have their contents pressed forward by the same agency. It is plain, therefore, that in the absence of contraction, the blood is not as efficiently changed as it should be. The process of repair suffers in proportion, and the muscle is wasted accordingly. As the circulation in the muscles is more abundant than in periosteal tissue, referred to in the beginning of this article, of course their degeneration from inactivity is not so rapid and so well marked, but amenability to the law of exercise is as evident in the one case as in the other.

Even the bony tissues are not exempt, but must obey the law or endure the penalty. The healthfulness of the periosteum depends very much on the vigor, or vitality of the surrounding tissues. The jarring of the limbs by leaping, striking, etc., acts directly as an irritant on the periosteal tissue, and the pressure on it by the contraction of the overlying muscles, aids in emptying its vessels, thus promoting its healthfulness and increasing its vitality, so that it can properly and efficiently nourish the bony structures which it overlies, in accordance with the office assigned it by physiological law. The dentine of the roots of the teeth probably receives a considerable portion of its nutrition through and from the periosteum; and it is important to keep this portion of dentine as full of vitality as is practicable, to aid it in resisting decay, and to prevent its tendency to act as a foreign substance; but it is preëminently true of the *cementum* that it gets its vital support from the periosteum. It is conceded that the cementum has a higher grade of vitality than that possessed by the dentine, and the latter will be badly nourished if the cementum overlying it is depraved, or has but a low degree of vitality. This calls up the principle with which our article set out, that the concussions in mastication are essential to vigorous circulation in the perios-

teum, while this is as essential to a full degree of vitality in the cementum. And so the statement of the "Preacher," though made nearly three thousand years ago, is fully vindicated; and we should all recognize and act on the principle that "the grinders fail because they grind little."

But while we recognize this inexorable law of "Work or die," we must not forget that it, like all good laws, must be judiciously executed. There is a homely, but no less true proverb, that "All work and no rest makes Jack a dull boy." Let us illustrate by the texture first considered in this paper. While we insist on the pressure of mastication as essential to the health, and even the life of the alveolo-dental periosteum, this pressure must be alternated with complete rest. Imagine the pressure continuous instead of intermittent. Is it not evident that the contents of the minute vessels would be not only expelled, but kept out? All can see that this would be incompatible with full nutrition. Pressure, or progress and rest is another law as indelibly stamped on Nature as is the law of "work or die."

DENTISTRY AS WE CAN REMEMBER IT.

WE never heard of a dentist till a little later than 1830. Not long after that date a man calling himself a dentist settled in our county town. He had not the slightest expectation of making a living by the practice of dentistry, but seemed to regard it as probably a profitable appendix to some other occupation. Accordingly, he acted as assistant in a drug store, with the understanding that he might practice his profession when opportunity offered. After a time he became a partner in the drug store, and paid less and less attention to dentistry as the years passed on.

The principal practice of this man seemed to consist in the removal of tartar, and the treatment of spongy gums. And thus far he seemed to be quite successful, even though he had probably never heard of "Riggs' disease."

We never saw any of his *plate-work*, for though not a politician, he was a *wireworker*. We obtained one or two specimens of his wirework for the college museum at Cincinnati, but they are probably lost ere this. Where a few teeth were wanted, a silver wire was bent so that the ends of it surrounded remaining

teeth, in place of clasps, the substitutes were human teeth, or pieces carved from ivory; each was attached to a piece of wire and this joined to the main wire by tinner's solder. One of our early tinner's, lately deceased, told me that he often did the soldering for him. In extracting he relied mainly on the turn-key. After a few years this man abandoned all thoughts of dentistry, and smilingly told us, years afterward, that he had never practiced dentistry.

In 1841 a mechanical genius made a few files, burdrills, and other instruments, and during his leisure hours cut the decayed portions of the teeth away, working only for his friends, and charging nothing for his labor, his theory being that if the decay were removed, further trouble would not occur with that tooth. He filed off about a fourth of a lower bicuspid for us, and the rest of the tooth is sound yet.

This seems trivial and quite unworthy of mention, but let us consider its results.

After seeing our tooth renovated, (?) our two room-mates borrowed the tools and began on each others teeth. One seemed to become fascinated with the possibilities of the new business; and while our older room-mate became a minister of the gospel, and the writer began the study of medicine, the younger one stuck to the tools, but soon secured better ones. After we three had separated, the writer received a letter from the junior of the trio in which was an expression like this: Mister! The first thing you'll know will be that I am a real, genuine, scientific dentist. All right, we thought; but without dental colleges, periodicals, or even private tutors, we did not see just how he was to reach his aim. But, as the *New York Tribune* said the Michigan boys had demonstrated that, in rowing matches, the "git-thar" stroke was the one to win, so our room-mate seemed to have the get there characteristic well developed: and this is all the more likely to be believed when it is known that this room-mate's name was JONATHAN TAFT.

Perhaps we can find no better illustration in our profession of the possible influence of one individual. Almost selftaught, we find this man struggling forward in the pathway of professional knowledge, not content that any should go beyond him in professional attainments.

But we wish to illustrate the progress and growth of our

profession in the lifetime and career of a single individual, and we almost fear that, in doing justice to the effort, we may become offensively personal; but nothing could be further from our wish.

So, another incident may illustrate the acorn stage of our professional oak.

A not very successful jeweler of our county town concluded to be a dentist. It was our privilege, being then a medical student, to listen to an interview between the ex-jeweler and our friend. We were decidedly amused at the cautious conversation of the parties. Each seemed to be anxious to learn without committing himself. Our friend doubted the attainments of the jeweler, who proposed for ten dollars, to tell him how to make a "cast." At any rate he did not invest, but pleasing us much better he opened an office in Xenia, which in 1852 received the writer as a partner, so that the sign read, Taft and Watt; and from that date the history of this office is not unfamiliar.

PROF. WM. CLENDENIN.

"THOU hast all seasons for thine own, O Death."

On the morning of the third of May, in the time of flowers, a spirit bloomed out of Time into Eternity, which had long been a moving spirit in our profession, while belonging to that of Medicine.

DR. WM. CLENDENIN was no ordinary man. While modest as a girl, he had in him the grit, energy and industry which never courted, but commanded success. In the exuberance of boyhood, he rode the famous horse American Eclipse, and *won the race*, just as he has won every race since. Even in the final race with Death, he is the conqueror "through him that loved him." "Mark the perfect, and behold the upright; for the end of that man is peace."

Dr. Clendenin was born in 1829; graduated from the Ohio Medical College in 1851; was a teacher in the public schools; a physician and surgeon with the elder and younger Mussey; in 1856 a demonstrator of anatomy in the Miami Medical College; afterward a professor, and dean of the same; in 1859, went to Europe to extend his studies; appointed an army surgeon in our civil war, and soon became a Medical Director, and afterward

Medical Inspector of the Hospitals. In 1865 he was appointed Consul to St. Petersburg, which place he felt it necessary to decline. His varied talents fitted him for varied work; hence he is professor of anatomy, of surgery, of surgical anatomy, etc., and he was a grand success in all. Perhaps his grandest work was as Cincinnati's first Health Officer. He brought order out of chaos, is the author of the health laws of the state, and under his care even the filthy city became the most healthy of the world.

Dr. C. lost his health in the army, and never regained it. From the day he was mustered out till the day of his death he was a constant sufferer, and yet he was a model of cheerfulness, and was always overflowing with friendly feelings. He was a gentleman, a scholar, a christian and a model man.

His relationship to our own profession is voiced by the action of the dentists of Cincinnati, in language more befitting than we can at present command, and is as follows :

A called meeting of the dental profession was held in Dr. J. Taft's office, to take action on the death of Dr. Wm. Clendenin, late Professor of Descriptive and Surgical Anatomy in the Ohio Dental College. Dr. J. Taft was called to the chair, and Dr. E. G. Betty was appointed Secretary. The meeting was largely attended by the leading dentists of Cincinnati, among whom were his former associates in the college faculty.

Drs. J. Taft, A. Berry, H. A. Smith, C. M. Wright, James Leslie, N. S. Hoff and E. G. Betty were appointed a Committee on Resolutions, which were duly reported to the meeting and unanimously adopted, as follows :

"WHEREAS, In the death of Dr. Wm. Clendenin, the dental profession of this city and of the country, through the Ohio Dental College, has lost one of its most able and successful teachers, who, during a period of nine years devoted his best efforts to the advancement of scientific dentistry by inculcating the foundation principles upon which the healing art in all its branches is based, and by his high-minded principles, his peculiar justness tempered by his kindness, his genial and courteous manners he endeared himself to his associates in the college, to the students and to all who knew him; therefore,

"*Resolved*, That we can not do less than place upon our record our high estimation of his noble qualities as a teacher, a physician, a public benefactor and a Christian gentleman, whom to know was to admire.

"*Resolved*, That we recognize in him a character worthy of all emulation.

"*Resolved*, That we recognize in his demise a loss to the medical and dental professions, and to the public especially, that will make a deep and lasting impression.

"*Resolved*, That our warmest sympathy is extended to his family, and that a copy of these resolutions be sent to them."

Dr. Clendenin has left a wife and youthful son to mourn their loss. May the father of the fatherless, the husband of the widow be their comforter.

Societies.

"Wherewith one may edify another."

MINNESOTA BOARD OF DENTAL EXAMINERS.

THE Governor has appointed the following as members of the Board of Examiners:

J. I. Clements, D.D.S., President, Faribault; G. V. I. Brown, D.D.S., St. Paul; B. G. Merry, D.D.S., Stillwater; M. R. Metcalf, D.D.S., Duluth; J. H. Martindale, M.D., D.D.S., Secretary, 412 and 414 Nicolet Ave., Minneapolis.

The board in its deliberations concluded to execute the full spirit and letter of the law, and also to observe, as far as possible, the dictates of the National Board of Dental Examiners.

J. H. MARTINDALE, *Sec'y.*

[We have received the text of the law, which is almost identical with the Dakota law. It will probably appear in the next number.—ED. JOURNAL.]

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

THE annual meeting will be held at the Sherman House, in Chicago, at 11 o'clock A. M., July 31st, 1885.

ARTICLE VII OF THE CONSTITUTION.

MEMBERSHIP: Any reputable dental college may be represented in this body upon submitting to the Executive Committee satisfactory credentials, signing the constitution, conforming to the rules and regulations of this body, and paying such assessments as may be made.

By order of the Executive Committee.

H. A. SMITH, *Sec'y.*

C. N. PEIRCE, *President.*

CINCINNATI, May 15, 1885.

BOSTON DENTAL COLLEGE.

THE eighteenth annual commencement was held in Memorial Hall, Boston, Wednesday, April 1, 1885.

The twenty-seven graduates are :

Edwin Oscar Blanchard, Vermont; Eugene Merchants Brown, Massachusetts; Frank Herman Cloek, Massachusetts; Herbert Dunning Currie, New Brunswick; Elmer Elsworth Eddy, Vermont; Wilmer Stuart Elliot, Massachusetts; Edmund Goodridge Flint, Massachusetts; Charles Aaron Fox, Massachusetts; George Edgar Hathorne, Maine; Charles Eugene Helah, Maine; George Henry Hoadley, Vermont; Harvey Martelle Kirk, Ohio; Frank Winslow Kyes, New Hampshire; Charles Arthur Leslie, Massachusetts; Fred Harris Metcalf, Vermont; Fred Carville Merrill, Massachusetts; Joseph Aloysius Moriarty, Massachusetts; Charles Francis Alexander Pagenstecher, West Indies; James Earle Pease, Massachusetts; Charles Beckwith Pierce, Massachusetts; Freidol Stillman Putnam, New Hampshire; William Roswell Sawyer, Massachusetts; Cyrus Tyler Sherman, Massachusetts; William Henry Spencer, New York; Oscar Herbert Stevens, Massachusetts; William Caswell Stoddard, Rhode Island; Leslie Mitchell Swett, Massachusetts.

Harry E. Cutter and Charles A. Leslie, of the senior class, receive honorable mention for excellence of examinations. Harry E. Cutter, Fred W. Barnes, William C. Stoddard and Charles A. Leslie of the senior class, receive honorable mention for excellence of Theses.

MISSOURI DENTAL LAW.

WE have had inquiries for the text of this law and present it below.

In a private note, a St. Louis friend writes as follows: "Our law is a very simple affair, but it works admirably, and is a source of less complaint than any law providing for a Board of Examiners that I am familiar with."

AN ACT TO REGULATE THE PRACTICE OF DENTISTRY IN THE STATE OF MISSOURI.

SECTION 1. It shall be unlawful for any person to practice dentistry or dental surgery in the State of Missouri without first having received a diploma from a reputable dental college or a university duly incorporated or established under the laws of some one of the United States or of a foreign government: *Provided*, That nothing in section 1 of this act shall apply to

any *bona fide* practitioner of dentistry or dental surgery in this State at the time of the passage of this act: *And provided*, That nothing in this act shall be so construed as to prevent physicians, surgeons or others from extracting teeth.

SEC. 2. Every person who shall hereafter engage in the practice of dentistry or dental surgery in this State, shall file a copy of his diploma with the Clerk of the County Court in the county in which he resides, and in the city of St. Louis with the City Register, which copy shall be sworn to by the party filing the same, and the clerk shall give a certificate of such fact with the seal of the County Court attached thereto to such party filing the copy of his diploma, and shall file and register the name of the person, the date of filing, and the nature of the instrument, in a book to be kept by him for that purpose, and as a compensation for his services, the said clerk for filing and registering the same shall receive a fee of one dollar, to be paid by the person filing the diploma.

SEC. 3. Every *bona fide* practitioner of dentistry or dental surgery residing in this State at the time of the passage of this act and desiring to continue the same, shall, within ninety days after the passage of this act, file an affidavit of the said facts with the Clerk of the County Court of the county in which he resides, or with the City Register of the city of St. Louis, if he resides in the city of St. Louis; and the said Clerk or Register, as the case may be, shall register the name of, and give a certificate to the party filing the affidavit, in like manner and of like effect as hereinbefore provided, and for such services shall receive a fee of one dollar, to be paid by the party filing the affidavit.

SEC. 4. All certificates issued under the provisions of this act shall be *prima facie* evidence of the right of the holder to practice under this act, which right it shall be incumbent upon the holder to prove under all prosecutions under this act.

SEC. 5. Every person violating any of the provisions of this act, shall upon conviction thereof, be deemed guilty of a misdemeanor, and be punished by a fine of not less than twenty-five, nor more than two hundred dollars for each offense; and all fines so collected shall belong to and be paid into the common school fund of the county where the offense was committed.

Passed April 2, 1883.

WISCONSIN DENTAL LAW.

THE Governor has appointed the Board of Examiners under the new law as follows:

C. C. Chittenden, Madison, for five years; B. G. Macklin, Milwaukee, for four years; Edgar Palmer, La Crosse, for three years; J. S. Reynolds, Monroe, for two years; E. C. French, Eau Claire, for one year.

AN ACT to regulate the practice of dentistry, and to establish a State Board of Dental Examiners.

The people of the State of Wisconsin, represented in Senate and Assembly, do enact as follows :

SECTION 1. It shall be unlawful for any person who is not, at the time of the passage of this act, engaged in the practice of dentistry in this State, to commence such practice, unless he shall have obtained a license as hereinafter provided.

SEC. 2. A board of examiners, to consist of five practicing dentists, is hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this act. The members of said board shall be appointed by the Governor. Three members of this board, at least, shall be members of the Wisconsin State Dental Society. The terms for which the members of said board shall hold their offices shall be five years, except that the members of the board first to be appointed under this act shall hold their offices for the terms of one, two, three, four and five years respectively, and until their successors are appointed and qualified. In case of vacancy occurring in said board such vacancy shall be filled by the Governor.

SEC. 3. Said board shall choose one of its members president, and one secretary thereof, and it shall meet at least once in each year and as much oftener and at such times and places as it may deem necessary. A majority of said board shall at all meetings constitute a quorum, and the proceedings thereof shall, at all reasonable times, be open to public inspection.

SEC. 4. It shall be the duty of every person who is engaged in the practice of dentistry in this State, within six months from the date of the passage of this act, and annually thereafter, to cause his or her name and residence or place of business to be registered with said board of examiners, who shall keep a book for that purpose; and every person who shall register with said board, as a practitioner of dentistry may continue to practice the same as such without incurring any of the liabilities or penalties provided in this act. The board of examiners shall furnish to the county clerks a certified list of those registered, and it shall be the duty of the county clerks to register such names in a book kept for such purpose. Every person registering with the board of examiners shall pay as a fee therefor the sum of one dollar.

SEC. 5. Any and all persons, who shall so desire, may appear before said board at any of its regular meetings and be examined with reference to their knowledge and skill in dental surgery, and if the examination of any such person or persons shall prove satisfactory to said board, the board of examiners shall issue to such persons, as they shall find from such examination to possess the requisite qualifications, a license to practice dentistry, in accordance with the provisions of this act. But said board shall at all times issue a license to any regular graduate of any reputable, legally incorporated dental college, which requires that the candidate for graduation shall attend two full courses of lectures of five months each, the last of which shall be attended in the institution granting the diploma, without examination, upon the payment by such graduate to the said board of a fee of one dollar. All licenses issued by said board shall be signed by the members thereof, and be attested by its president and secretary; and such license shall be *prima facie*

evidence of the rights of the holder to practice dentistry in the State of Wisconsin.

SEC. 6. Any person who shall violate any of the provisions of this act shall be liable to prosecution before any court of competent jurisdiction, upon information or by indictment, and upon conviction may be fined not less than fifty dollars nor more than two hundred dollars for each and every offense.

SEC. 7. In order to provide the means for carrying out and maintaining the provisions of this act, the said board of examiners may charge each person applying to or appearing before them for examination for license to practice dentistry, a fee of ten dollars. And out of the funds coming into their possession, from the fees mentioned in this act, the members of said board may receive all legitimate and necessary expenses incurred in attending the meetings of said board and in conducting the business thereof. Said expenses shall be paid from the fees received by the board, under the provisions of this act, and no part of the expenses of said board shall be paid out of the State treasury. All moneys received in excess of said expenses, above provided for, shall be held by the secretary of said board as a special fund for meeting the expenses of said board, he giving such bond as the board shall from time to time direct. And said board shall make an annual report of its proceedings to the Governor, on the thirtieth day of September in each year, together with an account of all moneys received and disbursed by them pursuant to this act.

SEC. 8. This act shall take effect and be in force from and after its passage and publication.

Approved March 23, 1885.

THE INTERNATIONAL MEDICAL CONGRESS.

THIS body meets in Washington, D. C., in 1887.

Following is the organization of Section 19 :

DENTAL AND ORAL SURGERY.

President, Jonathan Taft, M.D., Cincinnati. *Vice-Presidents*, W. W. Allport, M.D., Chicago; William H. Dwinelle, M.D., New York; Jacob L. Williams, M.D., Boston. *Secretary*, Edward A. Bogue, M.D., New York. *Council*, W. C. Barrett, M.D., Buffalo; Thomas Fillebrown, M.D., Boston; F. J. S. Gorgas, M.D., Baltimore; Edward Maynard, M.D., Washington; H. J. McKellops, D.D.S., St. Louis; C. Newlin Peirce, D.D.S., Philadelphia; L. D. Shepard, D.D.S., Boston; James Truman, D.D.S., Philadelphia; J. W. White, M.D., Philadelphia.

[In this connection we give place to the following circular received some time since.—ED. JOURNAL.]

In view of the fact that the Inter-National Medical Congress will meet in the City of Washington in 1887, the Chicago Dental Society at its regular

monthly meeting in December, 1884, appointed a committee to inquire into and ascertain as to the probability of the establishment of a dental section. The question of the desirability of such a section, properly organized appeared to meet with unanimous assent.

At the January meeting of the Society, this Committee reported that they had been informed, that at a meeting of the Executive Committee of the General Committee, having in charge the preparatory arrangements for the Congress, it had been decided to recommend the formation of a section on Oral and Dental Surgery to this General Committee.

They were also informed that at a meeting of this General Committee, previously held, a rule was adopted limiting attendance upon this Congress, on the part of residents of the United States to regular graduates in medicine. This rule the Committee were informed however was not irrevocable.

The question of forming this section of special interest to us as dental specialists, under such a restriction was thoroughly discussed by the Chicago Dental Society, and in consequence the Committee was authorized to communicate with the dentists of the country for the purpose of presenting the matter for their attention and consideration; and also to solicit the earnest co-operation of every one who feels interested enough in the progress of our speciality to desire that a section on Oral and Dental Surgery shall be a creditable exponent of American Dentistry, in persuading the General Committee to rescind the requirement of regular medical graduation, so far as this section is concerned.

No such requirement was enforced nor prescribed at the Congress held in London, England, in 1881.

It is confidently believed that with this rule enforced, many of the very men who have made for American Dentistry the proud position it occupies, and who have largely contributed to the possibility even, of placing our profession in a position to claim recognition by the establishment of a section devoted to Oral and Dental Surgery, would themselves be debarred from attendance. On the other hand, the graduate of the last commencement, who has absolutely no experience except the instruction conveyed to him by these men who are excluded, would be constituted fit representatives of our speciality.

Manifestly this would be unjust to both classes, and would most certainly fail to reflect that credit upon American Dentistry, which we all are vitally interested in maintaining before the world.

We all hope that the time when such a restrictive rule may be perfectly just may soon come, but it certainly has not come yet.

The undersigned Committee believe that the formation of a Section on Oral and Dental Surgery in connection with this Congress is desirable from our standpoint as Dental practitioners.

That all practitioners of Dentistry recognized by Dental societies of this country, ought to be eligible to membership or admission to the Congress.

That the formation of this Section in justice to the same, ought not, so far as it relates to the dentists placed in charge of it, to be made without the consultation with the leaders in the thought and action of our profession of this country; and

That these positions should be properly and respectfully presented to the proper Committee in charge of the arrangements for the Congress, for their deliberate consideration.

If you are in accord with these propositions, or any of them, may we not urge upon you the importance of aiding with your influence, in all honorable means to further this object, both individually and through your Society.

Very Respectfully,

T. W. BROPHY, M.D., D.D.S.,

C. R. E. KOCH,

J. N. CROUSE, D.D.S.,

Chicago, January 27, 1885.

Committee.

DAKOTA DENTAL LAW.

AN ACT To insure the better education of practitioners of Dental Surgery and to regulate the practice of Dentistry in the Territory of Dakota.

Be it enacted by the Legislative Assembly of the Territory of Dakota :

SECTION 1. That it shall be unlawful for any one to engage in the practice of dentistry in this territory unless he or she shall have obtained a certificate, as hereinafter provided.

SEC. 2. A board of examiners, to consist of five practicing dentists, is hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this act. The members of said board shall be appointed by the Governor, who shall select them from ten candidates, whose names shall be furnished him by the South Dakota Dental Society and the Northwestern Dental Association, each shall furnish the names of five candidates, and the Governor shall select at least two from each five names so furnished to be members of said board. The term for which the members of said board shall hold their offices shall be five years, except that the members of the board first to be appointed under this act shall hold their offices for the term of one, two, three, four and five years respectively, and until their successors shall be duly appointed. In case a vacancy occurring in said board, such vacancy shall be filled by the Governor from names presented to him by the Northwestern Dental Association and the South Dakota Dental Society. It shall be the duty of said dental organizations to present twice the number of names to the Governor of those to be appointed.

SEC. 3. Said board shall choose one of its members president, and one the secretary thereof, and it shall meet at least once in each year, and as much oftener, and at such times and places, as it may deem necessary. A majority of said board shall at all times constitute a quorum, and the proceedings thereof shall at all reasonable times be open to public inspection.

SEC. 4. Within six months from the time this act takes effect, it shall be the duty of every person who is at that time engaged in the practice of dentistry in this territory to cause his or her name and residence, or place of business to be registered with said board of examiners, who shall keep a book for that purpose.

The statement of every such person shall be verified under oath, before

a notary public or justice of the peace, in such manner as may be prescribed by the board of examiners.

Every person who shall so register with said board, as a practitioner of dentistry, may continue to practice the same as such, without incurring any of the liabilities or penalties provided in this act, and shall pay to the board of examiners for such registration a fee of one dollar.

It shall be the duty of the board of examiners to forward to the register of deeds of each county in the territory a certified list of the names of all persons residing in the county who have registered in accordance with the provisions of this act; and it shall be the duty of all registers of deeds to register such names in a book to be kept for that purpose.

SEC. 5. Any and all persons who shall so desire may appear before said board at any of its regular meetings, and be examined with reference to their knowledge and skill of dental surgery; and if the examination of any such person or persons shall prove satisfactory to said board, the board of examiners shall issue to such persons, as they shall find to possess the requisite qualifications, a certificate to that effect, in accordance with the provisions of this act; said board shall also indorse as satisfactory diplomas from any reputable dental college, when satisfied with the character of such institution, upon the holder of such diploma furnishing evidence, satisfactory to the board, of his or her right to the same.

All certificates issued by said board shall be signed by its officers, and such certificate shall be *prima facie* evidence of the right of the holder to practice dentistry in the Territory of Dakota.

SEC. 6. Any person who shall violate any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction may be fined not less than fifty dollars nor more than one hundred dollars, or be confined six months in the county jail.

All fines received under this act shall be paid into the common school fund of the county in which such conviction takes place.

SEC. 7. In order to provide the means for carrying out and maintaining the provisions of this act, the said board of examiners may charge each person applying to or appearing before them for examination for a certificate of qualification, a fee of ten dollars, which fee shall in no case be returned; and out of the funds coming into the possession of the board, from the fees so charged, the members of said board may receive, as compensation, the sum of five dollars for each day actually engaged in the duties of their office, and all legitimate and necessary expenses incurred in attending the meetings of said board; said expenses shall be paid from the fees and penalties received by the board under the provisions of this act, and no part of the salary or other expenses of the board shall ever be paid out of the territorial treasury.

All moneys received in excess of said per diem allowance and other expenses, as above provided for, shall be held by the secretary of said board as a special fund for meeting expenses of said board and carrying out the provisions of this act, he giving such bonds as the board shall from time to time direct.

And said board shall make an annual report of its proceedings to the

Governor by the 15th of December, of each year, together with an account of all moneys received and disbursed by them pursuant to this act.

SEC. 8. Any person who shall receive a certificate of qualification from said board shall cause his or her certificate to be registered with the register of deeds of any county of which such person may desire to engage in the practice of dentistry, and the registers of deeds of the several counties in this territory shall charge for registering such certificates a fee of twenty-five cents for such registration.

Any failure, neglect or refusal on the part of any person holding such certificate to register the same with the register of deeds, as above directed, for a period of six months, shall work a forfeiture of the certificate, and no certificate when once forfeited shall be restored, except upon the payment to said board of examiners of the sum of twenty-five dollars as a penalty for such neglect, failure or refusal.

SEC. 9. Any person who shall knowingly and falsely claim or pretend to have or hold a certificate of license, diploma or degree granted by any society, or who shall falsely and with intent to deceive the public, claim or pretend to be a graduate from any incorporated dental college, not being such graduate, shall be deemed guilty of a misdemeanor, and shall be liable to the same penalty as provided in section 6 of this act.

SEC. 10. This act shall take effect and be in force from and after its passage and approval.

Approved March 10th, 1885.

ALUMNI DENTAL DEPARTMENT UNIVERSITY OF MICHIGAN.

THE next annual meeting of the alumni of the *Dental Department*, University of Michigan, will be held at Ann Arbor, Mich., June 24th, 1885. A cordial invitation is extended to every alumnus to be present.

B. S. PALMER, '83, *Pres.*

MISS MARGARET HUMPHREYS, '82, *Sec'y.*

Books and Pamphlets.

A MOTHER TO MOTHERS, on Children's Teeth.—By Mrs. M. W. J., (the wife of a dentist). 103 pages. Philadelphia: T. B. Welch & Son.

This excellent little book has been revised and enlarged and can be had of the publishers for 25 cents a single copy; 10 copies post-paid, \$2.15; 100 copies, not post-paid, \$17.00.

SCHOOL HYGIENE IN TENNESSEE.—By DANIEL F. WRIGHT, M. D., of Clarksville, Tenn. Re-printed from the Second Report of the State Board of Health, January 1, 1885. 51 pages.

The first twenty-four pages of this pamphlet contain some excellent suggestions on school hygiene, followed, in the remaining pages, by a report of a sanitary inspection of the schools of Tennessee.

THE ASIATIC CHOLERA.—Its History, Description, Cause and Prevention, with a full resume of the latest researches of Koch. By HUGO ENGEL, A. M., M. D., Professor at the Medico-Chirurgical College of Philadelphia. Re-printed from the *Medical and Surgical Reporter*, of February 28, 1885.

TRANSACTIONS OF THE AMERICAN DENTAL ASSOCIATION, at the Twenty-fourth Annual Session, 1884. Philadelphia: The S. S. White Dental Manufacturing Co., 1885.

The essays and discussions in this volume, which the publishers issue in handsome shape, have been given to the profession through the journals, but many prefer them in book form and, we presume, copies may be had of the Secretary, Dr. George H. Cushing, Chicago, Ills.

AMENDED CONSTITUTION OF THE AMERICAN DENTAL ASSOCIATION AND CODE OF DENTAL ETHICS.

This is re-printed from the Transactions of 1884.

VITAL STATISTICS IN TENNESSEE, a report by J. D. PLUNKET, M. D., of Nashville. Reprinted from the second report of the State Board of Health, 1885, 26 pages.

This pamphlet contains statistics covering the twenty months, during which the registry law operated (May 1, 1881, to January 1, 1883), and arguments in favor the re-enactment of a similar law.

TYPHOID FEVER AND LOW WATER IN WELLS, by HENRY B. BAKER, M. D., Lansing, Mich. Reprinted from the report of the Mich. State Board of Health for 1884, 114 pages.

The author shows, by a series of observations and the collection of data from various places visited by epidemics of typhoid fever, that the fever cases increase with low water in the wells and decrease as the water rises.

BABYHOOD, devoted exclusively to the care of infants and young children and the general interests of the nursery. 15 cents a number, \$1.50 a year. Address Babyhood Magazine 18 Spruce street, New York.

Leroy M. Hale, M.D., is the medical editor and Marion Harland editor of the departments relating to general nursery routine.

PETERMANN'S DENTAL ALMANAC for 1885, 163 pages, cloth. Published by ADOLPH PETERMANN, Frankfort-on-the-Main.

This is the sixth year of this interesting directory of legal practitioners in the German Empire and Austro-Hungary. It contains steel portraits of Dr. William Siuerson and Dr. Wm. Herbst. We shall occasionally borrow some facts and figures from this little work and present them to our readers.

"DENTAL CARIES—A Critical Summary." A review of Henry Servill's paper by F. Searle, D.D.S., Springfield Mass. Reprint from the *Archives of Dentistry*.

Our Aftermath.

A SCULPTOR DENTIST.—It has been known for some time in artistic circles that Dr. N. W. Kingsley, an eminent dentist of New York and a member of the Lotos, is gifted with much more than ordinary ability as a sculptor, and when a short time ago it was announced that he had completed a bronze bust of Mr. Whitelaw Reid, the President of the club, his fellow-members became curious. Last night it was unveiled and formally presented to and accepted by the club. Col. Thomas W. Knox made the presentation speech, and Vice-President Frederick R. Lawrence formally accepted the bronze. The artistic merit of the work was, however, much too obvious to the club members to allow them to consent to anything short of the appearance of the sculptor. Amid much applause Dr. Kingsley made a bow and subsequently a very neat little speech.

There was but one opinion expressed concerning Dr. Kingsley's work. It was acknowledged on all hands to be masterly. The likeness to the original has been perfectly caught, but without any sacrifice of freedom of treatment. All critics—and the Lotos Club is by no means destitute of critics—united in praising the work.—*New York World*, March 15, 1885.

CAMP LIFE FOR THE NERVOUS.—Dr. Geo. M. Beard (*Archiv. Electrology and Neurology*, Nov. 1874) makes the following statements respecting the value of camp life for the nervous:

"One of the best cures for the functional nerve diseases of our large cities, is to live like a North American Indian. The great hygienic advantage of this kind of life is that it compels us to *breathe out-door air twenty-four hours a day*. Those who sleep in-doors never breathe entirely pure air. Experiment shows that there is little ozone or electricity in-doors; again, camp life shuts out the newspapers; reading daily papers robs us of our nerve force. Camp life is a trade and thus, to be learned only by degrees. Its real blessings are only for those who have mastered it. Abolish houses, the printing press, the telegraph and the railway, and the specialties of electro-therapeutics, and nervous diseases would disappear from the earth." Let us all camp out next summer, and thus cheat the above specialties of at least some of their victories.

A PECULIAR CASE.—Recently, while spending the night in the sick-room, I had as company a married daughter of my patient, an intelligent lady, aged about thirty-two years, who related the following—to me—most singular phenomena. Said she: "I am the mother of five living children, one dead. My terms of gestation are unmarked by anything unusual. My labors last about eight hours on an average. My last came as usual with me, pain beginning in the back, passing down to the lower part of my bowels. When I had been in labor about an hour the pain suddenly ceased in my back and womb, but set up in a tooth that had been aching several times during the past nine months. The pain was paroxysmal, coming and going just as it did in the womb. The pain was in my tooth when my physician came, and he wanted to pull it, but it being one of but few remaining molars, I said to him that the cavity in it was small, and that I wanted to have it filled—couldn't he put something in it and stop the aching? He put cotton saturated with chloroform in the cavity. The pain left the tooth to appear in the back and womb; but the effect soon passed off; the pain in a few minutes returned to the tooth, to be again and again relieved by the chloroform; the doctor said no progress was being made in the labor, and that in his opinion none would be till that tooth was removed."

"Did he say he had ever seen or heard of such a case before?"

"No, sir. Twelve hours had now passed; my former labors had none gone over eight—generally six hours terminated them. I had become, I thought, exhausted, and asked the doctor to pull my tooth, which he did, and my baby was born in an hour."

The attending physician in the above case, and with whom I was personally well acquainted, died not long after, so that I cannot have his history of it. My knowledge of the lady, though, justifies me in giving full credence to her statement.—S. W. CALDWELL, M.D., Trenton, Tenn., in *Miss. Valley Med. Mo.*

MAKING a patient keep his eyes closed while recovering from the ether is a great aid in preventing sickness; for, owing to the patient feeling giddy, any object at which he looks appears to sway from side to side; and this, by itself, is sometimes enough to produce a feeling akin to seasickness, even in those who have not been anesthetized.—*Med. and Surg. Reporter.*

OHIO STATE JOURNAL

—OF—

DENTAL SCIENCE.

VOL. V.

JULY 1, 1885.

No. 7.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

THE FEEDING OF INFANTS.

BY FRED. HOOPER HAYES, D.D.S., DOVER, N. H.

THE milk of the mother is the natural and only proper food for an infant. Therefore, the child should be entirely confined to it until the process of dentition has made some progress. I do not profess to be an authority upon this or any other subject, but I do feel that it is one of great interest to every practitioner of dentistry. He should be as well qualified to give advice and recommend a judicious course to be followed in this, as in any other branch of his profession. At birth the child has the germs of all the teeth in its jaw. It is therefore very essential that special attention should be given to the period of gestation, and that the mother be fed on the most nourishing and lime-producing food. Much of the food that is daily consumed has lost all or nearly all of the phosphates which are necessary for the development of the teeth and bones.

Very little attention is paid by the profession to the food of infants and to infantile hygiene. As a general rule, subject to a

The cow's milk should be diluted with water and sweetened with loaf sugar. By diluting it the proportion of caseine can be made to correspond with that in woman's milk, but the proportion of albumen becomes less. Caseine is the pure curd of milk, and consists of carbon, hydrogen, nitrogen, oxygen, and a small proportion of sulphur. Albumen is easily digested, but the caseine becomes indigestible, being coagulated by the acids of the stomach. By the addition of water, the sugar, which is necessary for bodily heat, becomes less. Cane sugar will not answer, as, in order to be assimilated, it must first be converted into grape sugar by the fluids of the digestive organs, and these fluids are not secreted in sufficient quantity by infants. It also produces, by fermentation, acids in the stomach which result in irritation. The presence of albuminoids is of the utmost importance in the nutrition of infants, as well as adults.. Sugar should not be given as the principal food, but as an addition to less palatable articles of diet. Milk is supplied by Nature to be our first food. This fact receives but little consideration by the dental profession. It contains representatives of all the substances which make up the animal frame, and it is on this account that it occupies so high a position among articles of food. It contains curd, which has nitrogen, and is equivalent to albumen and fibrine, and represents the blood formers. It has butter and sugar. These represent the heat formers. It has salts which represent potash, soda, phosphorous, etc.

The spontaneous acidification of the milk is caused by the fermentation of the sugar of milk, under the influence of the caseine, which results in the production of lactic acid. Lactic acid is an important constituent of the animal body, being found in the juice of muscular flesh, and in the gastric juice. Food will be valuable in proportion as it combines, in due proportion, the articles contained in the four groups, represented by albumen, fat, sugar and salts.

All animal and vegetable life begins with the cell. No cell is formed without a minute particle of oil. The portion not used in forming cells is either burned up, to keep us warm, by uniting with oxygen, or is stored away in the cellular tissue, adding to the bulk of the person. As the very beginning of life is dependent upon fat, it is of importance as an article of diet. When not taken in as food, it is formed out of albumen, in the process of

assimilation. Starch and sugar are never used in forming the tissue; but they perform important offices in the changes going on in the human organism. Wheat contains albumen, fat, sugar and salts in excellent proportion. When not deprived of the bran, it is perhaps the very best supporter of animal life. For this reason it is called "the staff of life."

Scarcely anything in the form of food could be devised that is so little adapted for nourishment during the first months of existence, or more liable to produce derangement of the stomach and the infant's health generally than the vile compounds of flour and milk, oatmeal and water, and the like. The powers of the infant's stomach are altogether inadequate to digest properly the articles of food thus forced upon it, and consequently results in gastric irritation, griping pains, disturbed sleep, and emaciation. The little sufferers often, too often, are forced to take more of the same food to relieve these troubles, or are given some carminative or cordial, and thus the mischief is constantly increased, until some severe or incurable disease is induced. It is true that a few very vigorous and healthy children pass through these distresses produced by improper food without sustaining any permanent injury to the health or constitutional infirmity. In many cases, however, the gastric irritation does not pass off so easily, and other dangerous maladies result from this state of the alimentary canal during infancy. Food improperly digested results in fermentation and decomposition. In children it causes sour stomach, and vomiting is the result. Children vomit more easily than adults, and the matter vomited is held in the mouth by the child, and finds its way in and around the teeth, during the stage of development, and deteriorates them. Eructation from the stomach causes deterioration at the junction of the gums.

There is little danger to the teeth when the child is supplied with its mother's milk. All the tissues get just the nourishment they need. The different parts of the body require different materials for their formation and sustenance.

As a general rule it is a duty incumbent upon every mother to nourish her own infant. Occasionally the mother is incapacitated by disease, or a defect in the nutritive properties of her milk, and it becomes necessary to transfer her offspring to the care and nourishment of a nurse, or to resort to the cow's milk. A course should be followed which is best calculated to produce

the best results in the dental structures. When "infant's food" is added to the cow's milk, it should be one containing a sufficient quantity of the phosphates which so powerfully assist in the proper formation of the teeth and bones. The utmost care should be taken to keep the sucking bottle perfectly clean and free from acidity. The danger which attends every attempt to rear an infant by hand, as it is termed, is now very generally recognized by mothers. Dentistry is not confined to the simple filling of a tooth, and the construction of artificial teeth. It embraces for its field of operation, a portion of surgery and pathology, and all the familiar principles of medicine.

THE INADEQUACY OF OUR RESOURCES IN OPERATIVE DENTISTRY.

F. W. SAGE, D.D.S., CINCINNATI.

[This paper was prepared for the Forty-First Annual Meeting of the Mississippi Valley Association of Dental Surgeons, but was not reached for want of time.]

A FEW years ago some one invented this maxim for the guidance of operators, "a tooth that is worth filling at all is worth filling with gold." The saying became the sheet-anchor of many aspirants to high rank among operators. What difficulties had to be surmounted in order to preserve a reputation for unvarying consistency no one who has tried to discard all other filling materials needs to be told. If other evidence of the unsoundness of the assumption embodied in this maxim were wanting, it could be easily supplied by many silent witnesses in the shape of cement, gutta-percha, and other fillings inserted by first-class operators. Still the fact remains that desperate measures were for a long time and are still employed to render possible a universal application of the principle that gold is the only suitable material for filling teeth. Device after device was invented to enable the operator to master the difficulties of inaccessible cavities. A strong spirit of emulation among operators sprang up; extraordinary difficulties stimulated to extraordinary efforts to overcome them, and many ingenious appliances and methods were suggested and successfully practiced. As a natural result, a few men in the profession presently attained to lofty eminence, by

reason of rare success in overcoming what to very many, were insurmountable obstacles to the use of gold foil. A new interest was lent to the discussions in our conventions and associations by the descriptions and demonstrations set forth in detail by these leaders of the profession. Was the adjustment of the coffer-dam in a difficult case a problem offered for solution, some exceptionally gifted operator was usually at hand to rise and explain how he proceeded in such cases. Was the question of retaining a clamp in position or of reaching a distant cavity broached, some genius was ready with his special appliance of curious design to make the crooked paths straight. Practical demonstrations upon a patient at the clinic were not wanting, still some problem-solvers contented themselves with the use of the blackboard and a bit of chalk. Sometimes the use of an appliance to be constructed in accordance with the requirements of the special case was suggested. If upon actual trial, the construction of the suggested appliance was found to be too difficult for the average operator, or if having been constructed it was found to be inadequate to the end sought to be attained, what of that? The failure illustrated the inferiority of the poor inquirer's practical talent, and redounded all the more to the glory and honor of him who offered the suggestion. A remarkable state of affairs had come about and prevails to day; to-wit: we find a large body of professional men led on and encouraged by a very small minority of proficients in the use of a filling material which it would seem that few can hope to be able to use successfully. A remarkable state of affairs, truly, that the success of the few should serve chiefly to illustrate the hopeless incompetency of the many! Who is to blame for this state of affairs? Who is to be held responsible for the failure of honest efforts put forth to invent a filling material worthy to supplant gold foil? It would be idle to charge the individual members of the profession with a lack of interest in devising some improvement in this respect. Are any, like Demetrius of old, fearful of endangering their craft? Is the five or ten dollars an hour that dentists receive for packing gold into cavities the real obstacle to the progress of invention? The advocates of a new departure failed to revolutionize existing methods for the all-sufficient reason that they offered no new improvements, no better alternative. They pointed out the shortcomings of the existing methods and to that extent they achieved

a success, of a negative character, it is true. They directed attention to the fact that the best operators in gold were not accomplishing all they claimed in the way of saving teeth. It was the bugle's blast calling a halt, in order to inquire whether or not gold foil was to be accepted as the ideal filling material. The statement included in the much criticized affirmation of the "New Departure's" advocates that "in proportion as teeth need filling, gold is the worst material used for filling cavities" would not be ignored or thrust aside. If these image-breakers had simply committed themselves to the opinion that gold foil does not fulfill all the requirements of an ideal filling material and had refrained from expressly encouraging the use of other materials already tried and found wanting, they would probably have won many a frank avowal of acquiescence from the very ones who resisted their conclusions.

Looking at the matter from every standpoint the conclusion seems to force itself upon us that the ideal filling material remains to be discovered. Consider for a moment some of the principles involved in the use of gold foil. Direct access to the cavity to be filled must be obtained, even at the expense of healthy, sound tooth-substance. That is a fundamental teaching as regards the preparation of the cavity for the reception of cohesive foil. In how many instances do we find the practice of this principle inadmissible, or being admissible, in how many cases is it highly objectionable? This principle, if literally adhered to, would result in the exposure of many a pulp. At best, free mortising down to the site of cavities, only partly accomplishes the purpose of gaining free access, in numerous instances which might be recalled. The necessity for such a course of procedure is certainly to be deplored. When cements are used the principle is largely modified, to the relief certainly of the patient, at least. We mold cement into cavities with comparatively thin, friable walls, which we would not dare to leave, but would freely cut away were we about to use gold. Twelve or fifteen years ago gold-workers pointed with pride and satisfaction to large contour operations glittering in front teeth. It was called artistic; and yet these operations lacked the very first requisite of perfection in art, which is to conceal art. The novelty of the thing carried us (and our patients too) away with enthusiasm. But the incongruity of a large mass of gold glitter-

ing in a front tooth forced itself upon attention after a while, and to-day, persons of cultivated tastes would gladly avoid any display of gold whatever in their teeth. The growing demand is for something closely resembling enamel. We hear with incredulity the avowal of our wealthy patient that he would rather have cement or gutta-percha in his front teeth for appearance sake. We think him niggardly or lacking appreciation of the higher order of dental art, or we attribute his whim to a fear of the coffer-dam and the polishing strip. Admit that neither cement nor gutta-percha would meet our fastidious patient's requirements, the fact remains that he objects to the appearance of gold.

But, about the possibility of saving teeth with gold, let us now inquire. This ideal filling material requires an ideal tooth upon which to exhibit its saving efficacy. Gold is the veriest autocrat. It says to the operator, adapt your conditions to my requirements and I will fulfill your wishes, provided you give close enough heed to such requirements as I may choose to impose later. I pay no attention to the requirements of existing conditions. I dictate my terms. You meet them as best you may. I know that I am accounted stubborn and exacting. What care I for your opinion of me, good or bad? I have one or two peculiar properties distinctively my own. These properties are indispensable to your success in your calling. Attempts have been made to usurp my supremacy as the king of filling materials but all have failed. I have my faults, glaring faults, if you please, but still you dare not disown me.

So the profession goes on using gold, cutting grooves along the friable edges of incisors in order to find an attachment for gold. The end is accomplished; the glittering mass clings like a parasite to the sensitive surface, and the triumph of gold is complete, albeit the bordering enamel may crumble, lateral walls break away bodily and cervical borders soften. The tooth may be thick, dense of structure, tough and devoid of sensibility; or it may be thin and translucent, imperfectly calcified, brittle, and exquisitely sensitive; it is all one, we will adhere to the maxim and fill it with gold. It may not be the best conceivable filling material, but it is the best thus far discovered.

Perhaps it would not be utterly idle and preposterous to consider what we would like to have in the way of an ideal filling

material. You royalists who shudder at the thought of gold's being dethroned, calm your fears, for the fulfillment of the prophecy belongs perhaps to the distant future. The ideal filling material should be a plastic, it should of course be indestructible, a non-conductor, compatible in every respect, color and appearance included, with tooth substance. It should possess the valuable quality peculiar to some of the cements now used, of attaching itself to and supporting comparatively frail walls of enamel. It should be easily and quickly introduced, and should be susceptible of a fine polish. In short it must combine the desirable qualities of gold and all other filling materials now in use, and in addition to these a few other qualities which the inventor will be likely to call to mind. How almost invaluable would be a material which would firmly adhere to a smooth surface of dentine without the aid of grooves or undercuts. How much mischief by the way, has been done by cutting retaining grooves; how many apparently strong walls of enamel have been undermined and checked? To be sure, we who fill with gold, or tin, or amalgam, have no alternative but to groove, if we would not have our fillings drop out. But the ideal filling material, which is expected to adhere to a smooth, flat surface, will obviate all that.

What a dismantling of our dental cabinets will result when the new ideal filling material actually displaces gold forever. Behold our fine sets of Varney's, and Butler's, and Chappell's, and Watling's pluggers forged over and made into excavators! Behold the decline of the finishing-bur, the corundum-point, the porte-polisher, the finishing-file, the polishing-strip, automatic, pneumatic, electric, and-so-forth-plugger, the file carrier, the polishing-buffs, Hindo-stan, Scotch, Arkansas and other wheels, the matrix, the burnisher, the foil-shears and crimpers, foil-carriers, the retaining-screw, the retaining-point drill, and finally, the stupendous yarn about the incredible consumption of gold by the \$30,000 a year operator who never, not even hardly ever, uses amalgam. Behold the decline in the consumption of coffer-dam rubber and silk ligatures, and in short, behold the changed visage of the dental depot's clerk when the dentist orders another fifty cent package of cement and says never a word about being nearly out of gold, and felt-foil, and amalgam, and mercury, and Hill's stopping, and oxide of tin, etc.

In a decade or two our forceps will all have been remodelled into can-openers, and our elevators converted into tack-pullers, while the nitrous oxide gas artist will join a circus or turn veterinary surgeon. The dental engine, the spatula, the excavator and the chisel only, will survive in all their pristine glory and vigor. No longer will the controversy wax hot in the dental convention over the merits of No. 60 as compared with No. 4 foil, or over the respective merits of grooves and retaining-pits. The exposed pulp will probably still come in for a share of attention, and pyorrhoea alveolaris will be met by a specific in the shape of an unrestricted opportunity to all the members to talk it to death.

What of the future? Fifty years hence another Barnum will scour the country for a man or woman with a Richmond crown. Five years hence—that is to say five years after the beginning of the looked-for New Era, dentists will charge a uniform price of one dollar per filling and they will fill ten teeth where they now fill one. Do not shrink so apprehensively from the inevitable, my dear professional brother. Your patrons are not going to forsake you to patronize some fifty cent man across the way. Skill and judgment and care have been your capital in the past and so they will be in the coming future. If you keep your hands and face clean, and don't reverse your collar too often, you may expect a much larger patronage than you ever enjoyed in the past. Those who have given their years to the study of the teeth, their anatomy, their pathological conditions, their relations to other organs, have but little to fear from an influx of new-comers into the profession, for dental education has already reached such a stage of development that the public have become informed and are able to discriminate between true attainments and mere pretense.

Seriously, we ask, is the forecast of the coming event as we have sketched it, quite improbable? Who shall say, in this age of astounding invention, that a simple, durable, in every respect satisfactory substitute for gold foil filling will not readily be discovered? What if some one not in the profession should announce the discovery and should organize a joint stock company of shrewd business men to make known its genuine merit, could we, if we were so selfish and ungenerous as to wish it, prevent the revolution which the public would at once demand? Who believes such a thing as successful opposition would be possible?

Does the contemplation of the bare possibility of what we have suggested cause heart-burnings, and must we then confess that the abolition of gold foil would cause the carefully constructed fabric, which we have been taught to believe was long ago firmly established on a corner stone of professionalism, to tumble into ruins? Perish a thought so unworthy! Perish the pride that couples the word professional with the worship of the golden calf! Where is all our profession of concern for the public's welfare? Has it vanished with the reflection that our elaborate measure for the prevention and relief of human suffering may yet be supplanted by other means far more simple and more easily applicable? Did time and space permit, it would be interesting to trace out at length the results, both as concerned the dentist and the public, of such a material being introduced. The thousands upon thousands, who at this day never resort to a dentist, would become his patrons. For it is not merely the expense of operations which deters many from the attempt to save their teeth. Fear is a powerful deterrent. If it were the case that we could dispense with the painful clamp, the nerve-rasping groove-cutter, the retaining-point drill, the disagreeable corundum-tape and the annoying rubber-dam, would not our operations be robbed of more than half their terrors? Who has not observed that the simple removal of the decay in a cavity may be accomplished with comparatively little pain in a majority of instances? It is the undercutting and drilling to secure a retaining shape that hurts most. What an impetus would be given to the cause of dental education by this revolution. The dentist would then find more occasion than ever to extend his sphere of practical usefulness by studying the diseases of the nose, throat, and other contiguous parts. Indeed this idea has already gained a foothold among some of the young members of our profession in this city, and the medical colleges have opened their doors to more than one D. D. S. within the past five years. It is possible then that the destiny of the dentist, a few years hence, will be entirely changed. Is there any occasion for regret that this may happen, when it is more than probable that it would result in the opening to us of a broader and more liberal field? We think not. Be all this as it may, there is no questioning the fact that with the introduction of such a filling material as we have tried to describe, such an overturning and such an upheaval in the

department of operative dentistry would occur as the wildest flight of imagination could hardly exaggerate. Will it come? If it comes are we prepared to show that gold foil is not the foundation stone of our professional pretensions?

When photography took its place among the arts, portrait painting declined. The artist remained an artist, but he underwent a metamorphosis. What will be our fate when the great improvement comes in?

TEXTILE FOIL.

BY E. G. BETTY, D.D.S., CINCINNATI.

[Written for the Forty-first Annual Meeting of the Mississippi Valley Association of Dental Surgeons.]

THIS material, I am fully persuaded, has not received at the hands of many operators the attention its merit deserves. I have frequently inquired of others how they like it, how they use it, and what are the results obtained from its use. To these questions a not infrequent reply is—"I know nothing about it. What is it? What do you do with it?" Again, I meet others who use it in daily practice, and their experience with it justifies them in giving it a hearty endorsement; in this I also concur.

When this "foil," if such it can be called, was introduced several years ago, very many were skeptical about it, and listened to the claims made for it with many grains of allowance for the earnestness and enthusiasm with which its inventor heralded its advent. On the other hand, an operator here and there took hold of it with the avowed determination of giving it an exhaustive trial, and subjecting it to such tests as would determine, once for all, whether or no it is worthy of a place upon our very meager list of filling materials. Since then it has gradually, but surely, won for itself a place that is by no means to be despised, and it is probably safe to say that the time is not far distant when it will be universally regarded as one of the staples, just as is tin foil and, though improperly, amalgam.

The number of materials at our command for filling purposes is so very limited that we can scarcely afford to neglect one that gives such promise of durability and continued usefulness. The

ease, thoroughness, and rapidity with which it can be introduced, all recommend its use in a large proportion of cavities that for lack of just such a material would be condemned to amalgam, much to the detriment of the patient and the conscience of the operator. Tin, which was formerly so much in vogue, has almost ceased to be used, and one rarely hears of it now, unless when spoken of in connection with a recent method of combining it with gold for the sake of a therapeutical or chemical effect it was supposed to exert when so used. It may be that this was Dr. Robinson's idea when experimenting to produce the material we now know as textile foil. Possibly he merely intended to revive the use of tin by imparting to it some of the working properties of cohesive gold foil. However that may be, he has certainly done us much service by placing in our hands a weapon with which the amalgam war may be more successfully prosecuted and to a more definite issue, so far as practical results are concerned.

That the foil is all it is claimed to be I am not prepared to say, neither do I believe that it should be given the cold shoulder as it is in the East, possibly for the reason that it is the invention of a backwoodsman, and from Michigan at that. By the use of this material the conscientious practitioner is often enabled to gracefully extricate himself from many an embarrassing dilemma when confronted by an intelligent patient whose exchequer does not rival the surplus in the national treasury, yet whose ideas upon the subject of amalgam are very pronounced, and not to be trifled with. It is for these reasons that I wish to call your attention to the subject, and if possible induce those experienced in the manipulation of the material to express their opinion in public, and give their several methods of practice, together with their reasons for so doing. To that end I wish to hazard a few remarks, more in the nature of suggestions than positive statements, and hope they will be productive of a profitable discussion.

There are three classes of cases in which the textile foil may be used with advantage. 1st. Very large simple and compound cavities in bicuspid and molars, where it is desirable to introduce an inexpensive yet reliable permanent filling. 2d. Those cases that would require a large expenditure of time to pack in cohesive gold, to say nothing of the possible detrimental effects of long continued malleting upon the tooth, and where it is desirable to preserve a surface of gold. 3d. For making a cervical

border of cavities that extend beyond the gum line, and which are difficult to keep dry sufficiently long to introduce strips or pellets of cohesive gold.

Teeth of the first class alluded to are those that fall a prey to the omnipresent amalgam, mainly for the reason that the operator does not expect, and rarely receives, a commensurate fee for filling with gold. In textile foil he has the wherewith to produce a reasonably priced filling and one that if properly made need not give him cause to blush. A few cylinders of the foil made loosely and of size proportionate to the cavity, are first introduced to form a foundation. The balance of the filling may be made with strips "cut with the grain," and malleted in after the manner of heavy gold; the finishing is to be done as usual. Such a piece of work will serve well for many years and always preserves the original color of the material.

In the second class, the foil plays a not unimportant part, and one that is frequently appreciated by the patient, for the reason that it enables the operator to save much time and expense, and yet produce work that is to all intents and purposes solid gold; I refer to very extensive crown cavities in the molars. These cavities may be filled one-half, and generally two-thirds full of the textile foil well condensed with the mallet, and then covered with a thick superstructure of gold. The latter is better retained in place by large retaining pits drilled into the foil at suitable angles, or an undercut may be left just beneath the enamel, for I do not consider that the so-called "welding" of the gold to the textile material is sufficiently reliable to retain the gold cap firmly in place. A large filling made in this manner possesses at least one decided advantage over one made exclusively with gold, viz.: it prevents, to a considerable extent, the shock incident upon sudden thermal changes, in this way rivaling oxyphosphate of zinc.

The third class of cases mentioned above, presents many difficulties that are almost insurmountable to the beginner, and not infrequently tax the patience and ingenuity of the most expert, when striving to make a filling of cohesive gold. Very often in such instances, there is not time to promote absorption of the gum with cotton wedges, and the custom of some to dissect away the superimposing soft tissues, not only inflicts unnecessary pain, but produces a hemorrhage, in many instances, that

impedes the progress of the work. The cervical border of the cavity, either in bicuspid or molars, is prepared in the usual way, and then covered with cylinders of the foil well malleted into place and brought up just above the free margin of the gum in its normal condition. This can be done quickly, and before moisture has had time to enter the cavity. Once the border is so covered, the case becomes simple, and the gold may then be introduced in perfect confidence of a good result. When first using the textile foil, it was my custom to fill such a cavity, or others of like kind, not extending beyond the gum line, at least half, if not two-thirds full with the foil. Experience has since taught me that the discoloration which ensues when the material is combined with gold, and both metals exposed to the fluids of the mouth, is not near so extensive nor objectionable when the amount of the material is reduced to the least practicable proportion.

Another point in favor of the foil is that it is often much more kindly tolerated in very sensitive teeth than gold, and often better than the oxyphosphates, the acid in the latter, if not prevented in some way, often producing intolerable pain.

“EXTRACTING FREE.”

NOT BY LONGFELLOW, BUT SOME OTHER FELLOW.

[Read before the Mad River Valley Dental Society, Dayton, May 19, 1885.]

THE shades of night were falling fast,
As through a Buckeye village passed
A youth who showed, to curious eyes,
A banner with a strange device,

—Extracting Free!

His kit he ope'd with bated breath,
A turnkey flashed from out its sheath
And like a railway dinner-gong rung
The accents of that hated tongue,

—Extracting Free!

In dentist's office on the right
He caught a gleam of hate and spite
As dentist there did fume and growl,
As 'twixt his teeth there 'scaped a howl,

—Extracting Free!

"Try not this!" the old man said,
 "Or you will rob me of my bread;
 The world is great, and large, and wide,
 So get thee hence, here let me bide,"

—Extracting Free!

"Oh stay!" the dentist's daughter said,—
 Jack Shepard's shape had turned her head—
 "And wait until the gums are healed."
 "Ah, no," he cried, "their fate is sealed."

—Extracting Free!

"Beware the dreadful dental law,
 To punish such as break a jaw!"
 This was the dentist's last goodnight
 As Jack packed up and fled from sight.

—Extracting Free!

But hark! next morn is heard a novel sound,
 Jack's partner, with the wagon coming round,
 To put in place the store-teeth grand
 Advertised by Jack and his brass-band,

—Extracting Free!

A victim, then the dentist found,
 With dyspepsia, gaunt, his bowels bound,
 But grasping still within his maw
 The teeth that killed by dread lockjaw,

—Extracting Free!

Quick hied the dentist to his association
 To warn all patrons in this glorious nation
 'Twere better far to pay a good fee
 Than die a sad death from

—Extracting Free!

DENTAL ECONOMICS.

BY J. H. PAINE, D.D.S., MIDDLETOWN, O.

[Read before the Mad River Valley Dental Society, Dayton, O., May 19, 1885.]

IN the dental profession we may appropriately, I think, lay down the basis of our useful science, and name it dental economy; and as there are several and diverse phases we will include all under the head: Dental Economics.

First we claim for dentistry a conservative element. To destroy is easy,—requires no learning, no art nor science; but to

save requires scientific knowledge, art in manipulation, and faith in evolution,—that kind of evolution which, working jointly with the forces of nature, evokes a better man, physically, intellectually and morally. To illustrate: It is one of the economics of operative dentistry to reconstruct a diseased and carious set of natural teeth. Many of them are impaired by decay. One, two, three, and even five cavities are not unfrequently met with in an individual tooth. Whoever transforms that oral cavity from an unclean, discolored, unhealthy, disgraceful pool of noxious disease-breeding, health-ruining, uninviting vortex, wherein revel bacteria and animalculæ, into a restored set of teeth, well plugged, cleaned of carbonate of lime, and rescued from gnawing, rankling bacteria and animalculæ, is an economist, *par excellence* to his race, and stands in the fore front among evolutionists, whether of the body, mind or soul. We believe that well filled, clean teeth indicate intelligence. In every community he, she or they are the best looking, most tasteful, and most godly who take the best care of their teeth. Hence we prove our first proposition that the capable dentist practices the noblest phase of dental economics, when he gives most attention to saving the natural teeth. Useful as artificial teeth are, they should always stand aside, or in the process of manufacture, should be at once laid on the laboratory table, when there is a waiting cavity in a natural tooth in the operating room. One of our best dentists never neglects a natural tooth that is known to be waiting for his art preservative for any other work, certainly not for plate work. The latter will do well enough when there is nothing better, nothing higher, nothing more ennobling. True dental economics has written all over its diploma, Save! Save! and, in parenthesis, (Only quacks needlessly destroy). But some man will say, there are so many filthy, non-appreciating, non-paying patrons, in every community, that the dentist cannot afford to bestow the care, skill and persistency necessary to evolutionize this dental apparatus from filthiness, *per se*, to sweetness, *de facto*. Yet we may teach all nations, baptizing them with truthful teaching. Instruction is golden. Therein lies all the difference that pervades the immense distances between savage and cultured life, between a slum in Madagascar, and a professor in Harvard University.

We wish to rank next to intelligence, on the part of the dentist in his own person and individuality; exact and scrupulous

cleanliness. What if he be poor? water is free; tooth brushes are cheap; *creta preparata* is not costly; perfection soap is attainable; shoe blacking pays and tells that he is not only a dentist, but a gentleman as well. If he practice the preaching he orates to his patients, the preaching will do more good, and in fact will do only the good that is represented in practice.

We most solemnly adjure the younger brethren of the profession to abstain from every untidy, coarse form of amusement. Playing base ball, grooming horses, etc., are not elevating in ethics, nor helpful in dentistry. A brisk walk for exercise, a good book for company, and a patient in the operating chair should give the dentist more pleasure than anything else beside. It were well to have it lettered in gold on the wall, where it will constantly inspire you, Destroy not, save if possible, *SAVE!* But some man will say, how shall I save? We answer: save by removing the diseased part and the dead. There are many cases the dentist sees not until death has begun its work. Toothache is usually death of the pulp begun. Now it is not always necessary to remove the entire pulp to rescue from death the entire tooth. It is not always necessary for the general surgeon to remove the entire limb to save the body. Hence, as to topical applications, we reject arsenious acid. It is no longer used by the far seeing dental surgeon. Be as cautious as he will, it will get where he does not want it to go, and even years afterward, if not earlier, will exhibit its "killing" work, in the translucent appearance of the dentine, the blue-edged color line about the cervical wall, and the worse than all beside, condition of encystment of the periosteum in the alveolar process, and the inevitable break down of its ossific structure; and irremediable extraction must follow ere peace come to that house.

What the dentist wants in his practice in saving the natural teeth is not death, but life. Save the pulp if possible. If it dies, remove as much of it as you can, using great care to not thrust the instrument through the foramen and innoculate the alveolar process with the pus of the dead pulp, so that alveolar abscess be superinduced; and not only would we then have dead pulp of the tooth, dead periosteum, or parts about the apex, but presently dead tooth itself, and then mechanical dentistry is invoked, and Ichabod should be written on our wall; for we have filled the tooth and it is lost.

After so much elaboration of points let us outline our

rational, common sense practice: First, carefully examine the tooth, open the cavity skillfully and thoroughly. Remember you must see into the cavity, even if it is a posterior cavity in a second superior molar. Remove all foreign matter, and ascertain, beyond doubt, the condition of the pulp. No medicine, however skillfully applied, will avail to rescue the tooth from ruin, while the pulp is covered with foreign substances. Light and air are wanted in that tooth as much as in many a cellar. Then carefully explore, but do not pierce to the pulp; yet it is needful to know its state. Is it alive? or semi-alive only? If we can obtain the least plasm of blood we shall rejoice; for then can we properly diagnose our case. Blood-letting at the door of the pulp chamber is orthodox treatment.

If the blood be bright, vermilion-colored, which indicates arterial blood, all we need to do then is to moisten, with equal parts of alcohol and pure carbolic acid, the exposed part and fill with oxyphosphate of a cream-like consistency, and guard for several minutes from saliva. But slight pain will follow unless death of the pulp has been superinduced, in which case we should at once remove our temporary covering and induce bleeding. If we do not do this, tumefaction will ensue, severe pain will follow unless reduction be persisted in. Enlarge the orifice of exposure; apply only antiseptics. As the surface becomes albumenized, that part can be removed almost painlessly; and allowing but slight cotton capping, so that any putrescent gas forming there can find its way out, alveolar abscess will be averted. In a few days the pulp will either have died, and its removal can be effected, or nearly so. We say nearly so. We think it is hardly possible to get all the small limbs of the pulp out, and it is not best to broach too deeply, lest a worse harm come to the case. Several days ought to be allowed the nearly open cavity before filling, to permit the exudation of dead and effete substances. Then a soft filling made of oxide of zinc and carbolic acid and alcohol, (the fluids in equal or nearly equal parts), constituting an embalming cream, which should be filled into and permeate the pulp chamber as much as possible. After a few minutes the main cavity should be prepared and filled with some one of the several good cements, not amalgam, for amalgam is the worst material we could employ in all cases where there is the least fetor. Tumefaction is almost always sure to follow its use. It is the most impermeable of all compounds. Gas cannot get through

it. In all cavities where there is no gas generated, amalgam is, perhaps, the best material, so far as non-leaking qualities are concerned, but where gas is formed, or is likely to form, therefore, the worst. I remember to have removed an old tin filling that had done good service for thirty years, refilling the cavity with amalgam. Within a few days my patient returned with swollen face. I removed the filling at once, and extirpated the old dead pulp, which I had overlooked in the former operation, cleansed the shell and refilled with gutta-percha and it has done well since. Yet since the great improvement in the oxyphosphates, I usually prefer some one of them to gutta-percha. If trouble occur, remove the temporary filling and deodorize the pulp chamber, scarify the gum and apply tincture of iodine as a stimulant. The old fashioned treatment of poulticing did only that. Its stimulation of the blood vessels to better perform their work was what seems to give relief. A better plan would be to employ the leech, if we dared; but young America is so nice, and we are so polite that we allow the young reptile his utmost liberty. Incisions should be freely made around and about the tooth. If painful there is no better treatment than blood-letting. If the blood is dark, this should be continued, as pus will assuredly be formed from this devitalized fluid. No dark blood can ever be restored to life and its uses until oxygenated by contact with atmospheric air in the lungs, and when so much thickened as it is in all these cases of tumefaction it cannot be returned through the capillaries to the veins and by them conveyed to the lungs for purification. This is not only a great, stupendous fact in tumefactions of the gums and alveolar processes, but in all the inflammations and tubular risings and gatherings which flesh inherits. Our long experience prompts us to say to the young men of the profession, "Remove the poisoned blood as soon as possible, then you can save the tooth." And to the surgeons I would say, "Remove the poisonous blood, then can you save the limb." If unable after all this to arrest the suppurative process, let it head properly over the external foramen of the tooth, opening it frequently with the lancet, and encourage, by a thin layer or slice of fig, the formation of pus. A few days will suffice to cure the case and the tooth will be saved. But if our patient will not wait nor allow this treatment, the tooth will have to be extracted. The loss of the tooth in such cases is not our fault. Our treatment discarded we are clear.

OXY-PHOSPHATE.

BY E. G. BETTY, D.D.S., CINCINNATI.

[Read before the Mad River Valley Dental Society, Dayton, May 19, 1885.]

UNDER the head of "Different Materials for, and Methods of Filling Teeth," it may not be amiss to say a few words about our very good servant, oxy-phosphate of zinc.

This substance, as all are aware, is the result of a chemical union between a base and an acid; but with that part of it we will have nothing to do to-day. I am daily becoming more convinced that this material is of more service than we imagine in this that, it enables us to ultimately save more "aching" teeth than we could were we still dependent upon the oxy-chlorides. It is my custom to fill *all* teeth with it in which the decay has been so extensive as to nearly expose the pulp, those in which it *is* exposed and dead teeth that have undergone conservative treatment. In case the decay has not exposed the pulp, the debris is thoroughly removed and the cavity filled with a bolus of the phosphate mixed as dry as possible; the surplus is then removed and the filling covered with wax or paraffin, or it may be given a smooth surface by polishing with heated talc. Should the pulp be exposed, remove the decay, cover the pulp with some kind of varnish, comp. tinct. benzoin is most excellent, flow over it a little of the phosphate prepared very thin, when this has hardened, trim and fill as in the first case. Dead teeth are also to be filled with a stiff bolus. The main point in the use of the phosphate, if you wish to secure full service from it, is to allow the filling to remain as long as it will last, which, in very many cases is about two years. Should it not remain so long, refill. The object of this is to give the tooth a *long rest*, the longer the better at the end of a year and a half or two years, large operations with cohesive foil will be borne by the tooth so treated with but a slight chance of producing either death of the pulp in the one case or recurrence of periosteal inflammation in the other.

A writer in the *Independent Practitioner* for May, recommends that a small quantity of iodoform be mixed with the thin oxy-phosphate to be flowed on exposed pulps, or immediately

over the thin dentine covering one almost exposed. Though I have not tried this, yet I am inclined to think the principle is good.

DENTAL ECONOMICS.

BY A. BERRY, D.D.S., CINCINNATI.

[Read before the Mad River Valley Dental Society, Dayton, O., May 19, 1885.]

I PROPOSE to advance a few ideas of dental economics in accordance with one of Webster's definitions of economy: "a judicious application of time, of labor, and the instruments of labor."

In the dental office everything should be kept in order, with all instruments and appliances ready for use, that no time be lost in preparation when a patient calls. Appointments should be met promptly, and operations performed without unnecessary delay. It is well to procure gold foil by the ounce, and other materials for filling teeth in considerable quantities, to avoid waste of time in obtaining them in smaller amounts when wanted.

For extracting teeth the most complete set of forceps of best forms and sizes, as well as a dozen or more elevators of skillfully devised shapes, should be at command. If an important instrument becomes unfit for use it should be repaired at once, or replaced by another. If the band of the dental engine fails, and another cannot be obtained readily, a common chalk line affords a substitute as good in every respect as the original. If nitrous oxide is used and made at the office, it is economical to have the gasometer not less than one hundred and twenty gallons capacity, as it saves time and trouble to make gas oftener with a gasometer of usual size.

In the laboratory should be the best appointments for obtaining good results with the least expenditure of time. The tools, lathes, furnace, and vulcanizers, should be in excellent condition. Newark plaster of paris of good quality is prudently procured by the barrel. To have it set quickly and make a hard cast it should be worked rapidly for a considerable period before pouring. Several hundred dollars worth of teeth kept on hand will prove a paying investment, obviating the necessity of getting them in emergencies from dealers, as well as being advantageous

to select from when the patient is present. There should be a good assortment of the various sizes, forms and colors. Those similar in color should be put together to facilitate selections. Gold and other materials for mounting teeth should be ready for any contingency.

The Buckeye vulcanizer (invented by Dr. C. H. James of this society), secured by one screw, without numerous or complicated fastenings, simple in construction and easily manipulated, is preferable to any other, but it should be more strongly made and of a little larger diameter than those usually in the market. A pin in the side of its rim so set that it will rest in a notch in the top when in place, keeping it constantly in the same position, is very convenient. Asbestos packing is much more durable than rubber. Flasks held together by wedges possesses decided advantages over those with bolts. For testing the degree of heat of a vulcanizer a thermometer is unnecessary. A few drops of water applied will, after a little attention to the process, prove less troublesome and quicker than scrutinizing a thermometer for testing the heat, and with equally satisfactory results. And besides it is economical to keep free of the occasional and needless expense of one dollar for one thermometer, or ten dollars for a dozen. A vulcanizer should never be used without a safety valve, guarding against the fear and danger of explosion; of which there is little risk with prudent management. If a fire in stove or grate is at hand, putting the vulcanizer in a kettle and raising the temperature to the boiling point, before placing it over the heat for vulcanizing, saves time and gas. Above 112 degrees the heat is best applied steadily so as to raise it slowly in about eighty minutes to 310 degrees, and after holding it there thirty minutes the heat may be stopped, and the vulcanizer left in place until cold. Rubber hardened in this manner is much stronger than that vulcanized in the usual time and at a higher temperature.

OUR PATIENT.—We find the following paragraph in W. E. Norris' novel *Adrian Vidal*:

Most of us, as we stand upon the dentist's door-step, have just the shadow of a faint hope that he may not be at home; but he always is at home, and we should be justly indignant with him if he were not.

MAD RIVER VALLEY DENTAL SOCIETY.

Discussion on DENTAL ECONOMICS.

Dayton, O., May 19, 1885.

[Reported for the JOURNAL.]

DR. J. TAFT, of Cincinnati, said that when he first saw the program he thought this was altogether an unusual subject, and he wondered what the train of thought had been which led to its suggestion; but on more careful consideration it seemed to be quite appropriate. Economics, said he, is the science which treats of the best possible use of resources. It proposes the selection of the best methods and resources and making them available, so as in all efforts to attain the best that can be.

Now what, said he, are the resources of the dentist, or of dental science? And the first resource he would name is *knowledge*. How can we best attain to and use it? How best take care of and increase it? The idea of economics involves the increase and improvement of resources, as well as the use of them. A wealthy man practices economy not only to keep, to hoard up that already possessed, but also to gain. We should get all that is possible out of this resource, knowledge, for the benefit of our patrons; but we must add to it as well. The graduate may think he is at the topmost round of the ladder when he receives his diploma, but he will find that he is widely mistaken.

We should use diligently all proper means for gaining intelligence, and still we must expect interruptions. Bad health or other causes may turn us aside for a time, but we must see that the influence of such is not permanent. Things entirely proper in their nature may act adversely to our pursuit of knowledge, and we must be on the watch for these. When we consider how important and how sacred the treatment of disease is, and feel the proper responsibility in regard to it, we will omit no opportunity to extend the range of our knowledge, while we will use all the means in our power to make it more accurate and better.

Ordinary means of mental improvement are within the reach of all. We have our literature, both periodical and permanent,

and we ought to get all possible good from this source. We are apt to read after new things, but we may be quite as much edified and improved in many cases by reading up on the older principles. We can more accurately decide as to the real value of the old, as we can call to our aid our own experience and that of others. And we should make this literature our own, not being mere copyists or receptacles, but we should be so familiar with the facts and principles of our science that they become a part of ourselves.

As a second resource of the dentist he named Appliances, or Materials. True economy will always use the best. In every detail of practice we should use the most applicable, and here there may be, and is great difference of opinion, and there is nothing wrong in this, as an appliance may suit one, while not well adapted for another's use. We should never be deterred from doing the best by a love of ease, nor should we try to economise time by over-rapid operating. In all cases we must take all the time necessary to produce the best results. It has been said of amalgams, etc., they are so easily used. But we must not decide our course of action by determining what is easy, but what is *best*. The question is not, Will it do? but, is it the best? It is a great satisfaction to feel and know that you have done your best. Let us have the very best instruments made, and suggest still better ones to the makers. If we visit the offices of our brethren, do we always find the best things in use? I do not. Yet it is a proverb that the best is the cheapest.

There is yet a wide field for thought in reference to the medicaments to be used in our profession. Remember that new things are not always best; but that new things often crowd out old things that are really better. We ought to understand the foundation principles, and then we shall not be led far astray after the new. Some appear to adopt uniform treatment without discrimination. Remedies fail often, when thus used, when if properly selected good would result. We must understand that disease varies in its phases, and the principles of treatment must vary to suit the variations. Make proper and judicious use of knowledge, instruments, light, materials, will,—all our resources—and then we can accomplish the good we aim to do.

DR. C. A. MURRAY, of Delphos, wished to ask Dr. J. H. Paine if he had correctly understood his paper that, in order to

success, a young dentist must give up the idea of enjoying a horse, or a bat.

DR. J. H. PAINE, of Middletown, referred to cases where from base ball playing the hands were totally unfitted for the performance of delicate operations. If the young dentist owned a horse he would allow him to take care of him.

DR. J. TAFT resumed his remarks to say that economics required the most perfect order and system. The instruments are to be not only the very best, but so placed that no time will be lost in getting the one desired. He had been in offices where all the excavators were in one promiscuous pile. Each class should be separate from the others, and the dentist should be so familiar with his classification and arrangement, that he could at once take hold of any desired instrument, even in the dark. He thought that not more than six to twelve excavators should be placed together. Other instruments should be classified and arranged on the same general principles. Let no useless instrument be in the way, and the useful ones ought to be kept in the best possible condition. Thus both time and strength are economized. Looking for a misplaced instrument, or having to stop to sharpen one while operating, is apt to cause fretfulness, and that is a source of weakness. Let all the surroundings be the very best; and systematic arrangement applies to medicines with as much force as to instruments. Anything but seldom used ought to be put in the back-ground, so that what are more frequently needed can be made the more accessible.

Care of the health is a very important consideration. A horse is good for some, while only a nuisance in my hands, said he. He likes to work with bees. Some prefer to go fishing. One a long time ago said "I go a-fishing," and it was approved. (Dr. Watt said, Yes, by his comrades, but not by the Master.)

DR. C. H. JAMES, of Cincinnati, said that in the selection of exercise for the promotion of health, each must choose for himself, in accordance with his taste and circumstances. He did not like base ball. The exercise was entirely too violent for the dentist, and it unfitted his hands for delicate work, and also rendered them more or less unpresentable to refined patients. A gentle touch was almost an impossibility on the part of the base ball player. His own taste would lead him to military drill and exercise. This did not require violent exertion; and practice once a

week in a volunteer company would generally be found refreshing, while he was sure that a brisk game of base ball would lay him aside for at least a week. It is well, he thought, for some to keep each a horse, and to feed and groom him if he likes to.

And now, said he, if the chair and the members would permit, he would like to call attention to the re-organization of the State Dental Society. It was known to all present that this society, as formerly organized, had disbanded; but immediate steps were taken to re-organize, and to incorporate the new organization, and it was now a legal artificial personage that could sue and be sued. It was his lot to be elected to the presidency of the old society, just as it was in its dying agonies, and he could hardly tell whether or not to consider that complimentary; but as the new organization had seen fit to elect him as its first presiding officer, he could say cordially that in this he felt highly honored. And in this capacity, representing the new State Society, he would respectfully invite, and indeed urge all present to be on hand at the annual meeting of the new Society, at Chillicothe, next October, the day and hour to be duly announced as usual. He thought all would realize that we must have a State Society, and all who so believed were in duty bound to aid in its success.

DR. J. H. PAINE called attention to a matter that he thought was often a severe tax on the dentist's time, and that it led to leanness of the pocket book, which he regarded as a serious disease. He had formerly submitted to all the losses thus entailed, but more recently he had learned how to manage such conditions. He could illustrate so as to be fully understood by describing a train of circumstances that had occurred in his own practice. He owed a neighbor, and the contract called for payment of the debt by professional services. The man had several teeth to fill, and while he was working for him a cash patient came in from quite a distance, and as he could not well afford the loss of time involved, he was likely to go to another office, if he could not work for him. In former years he would have let him go, and thus he would have lost the man's patronage that day, and perhaps for all time. While in the reception room he told the man to wait awhile, and perhaps he could do his work. He knew the patient in the chair would come back, as he would want his pay for the debt. So he gave a tooth some temporary treatment, and

told the man that all things considered it would be better to postpone the rest to another sitting, and accordingly gave him a new appointment, and so got cash for the transient patron's work, and besides secured his patronage for the future. In short, when working for dead-heads, and there is a chance for cash down, suggest further preparatory treatment. And akin to this violation of economics, many do themselves injustice by making too definite promises as to when mechanical work is to be ready. Tell the patient that so many interruptions occur that it is difficult to make an exact calculation, but that when about ready, you will send timely notice.

DR. W. H. SILLITO, of Xenia, thought if the time was promised to even a dead-head, it should be given him in full, unless, with a full knowledge of all the circumstances, he is willing to give it to another.

DR. F. C. RUNYAN, of Springfield, said he often got the consent of the patient, who had engaged the time, to give it to another; but if from any cause it did not suit him to yield it, he recognized the patient's right to a fulfillment of the contract. As to out-door exercise, he liked a horse and kept one, and it could go along the road so rapidly that not many were able to pass him without his consent, and this added to his enjoyment of the ride. He regarded billiards as a healthy exercise.

DR. L. C. ADAMS, of Dayton, regarded it as important to take out door exercise, but it should not be done to such extent, or in such manner as to injure our practice. Gardening, carpenter work, care of poultry were all suitable. He referred to a dentist of his acquaintance who had become so fascinated with base ball that his indulgence in it had become quite a detriment to his business.

DR. W. N. WILSON, of Richmond, Ind., said he resorted to outside amusement daily. He had trouble to keep up such a state of health that enabled him to do a full day's work. Some would study at early morn and late at night. In order to the best health we must be systematic. He kept a horse, took care of him, and enjoyed driving him. This was good for the health, for we can't drive a spirited horse and keep up our studies. He regarded it as an important duty for the dentist to keep his appointments. He expected the patient on time, and the patient expects him. He did not work for dead-beats. We should do

each patient's work as quickly as it can be done properly. We have no right to take the time which the patient has engaged to examine new cases. And if we do, our examinations are apt to be too hastily made. He reported a case in which a lady lost a very valuable tooth by a too hasty or careless examination. We should set apart a definite time for each examination, and conduct it carefully. A proper examination cannot be made in five minutes. Of course we would find it necessary often to depart from an ironclad rule; but we should, in all cases, be honest with our patients.

DR. C. H. JAMES said that the medical profession have their patrons far better educated than we have ours. We must educate ours better, or there will be frequent misunderstandings. And to accomplish this we must combine in our teachings. Time ought to be paid for, as really as work. Let our patrons be taught just what to expect from us. If you are already busy, and they can't wait, let them go. And if they leave their regular dentist because he is busy, and come to you, you ought to be busy too, and send them back. Our profession is in need of this kind of education too.

DIFFERENT MATERIALS FOR, AND METHODS OF FILLING TEETH.

DR. BERRY said Dawson's oxy-phosphate was the best he knew of in market. Dr. Beemer, of Cynthiana, Kentucky, had sent him a specimen of his own make, which he found to be still better. He called attention to the fact that the hardening process or crystallization, can be much hurried by using the warm-air syringe.

DR. WILSON uses gutta percha, or Hill's stopping, at the cervical margin, and then finishes with the oxyphosphate.

DR. MURRAY inquired as to the relative solubility of the oxyphosphates and oxychlorides, or rather he meant to, as he afterwards explained; but as he inadvertently said Hill's stopping instead of oxychlorides, he failed to get a satisfactory answer, and hopes some one will yet give him an answer through the OHIO JOURNAL.

DR. BERRY said that the gutta percha fillings were preferable to the oxyphosphates, etc. where the moisture is not controlable, and he thought they were entitled to a higher reputation than they receive.

DR. WATT said that both tin and gutta percha made most excellent fillings, in cases calling for their use, and both are quite too much neglected by the profession. Teeth could be saved successfully with gutta percha when too soft and friable to receive good metallic fillings. A difficulty in its use on grinding surfaces, is that the patient neglects to return and have them renewed as they wear down. For the teeth of the very young, in crown cavities, tin is much more reliable than gold. One reason is its greater plasticity or compressibility. A filling is, therefore, less liable to leak. And if corroded at all in the mouth, the corrodent is almost certain to be chlorine, and the chloride of tin is antiseptic.

DR. J. H. PAINE said he had filled a tooth with tin in 1858, which is yet as good as when first filled.

DR. C. BRADLEY suggested that the question before us is, With what material are we doing the most good in filling teeth.

DR. WATT thought the proposition as it stands in the program, would include all filling materials fit to be used, and the proper methods of using them.

DR. J. TAFT spoke of the ordinary and then of the proper mode of using the oxyphosphate filling material. It was common, he said, to lay a portion of the powder on a slab, place some of the liquid in its vicinity, then mix hastily and insert. But this did not give the best results. The ingredients should be placed, in proper proportions, on a slab, and thoroughly incorporated by hard pressure with a stiff spatula, taking all the time needed to make a complete mixture, as well as to consolidate it. By this mode far more compact fillings can be made. He had seen such remain good for four or five years, while the ordinary ones were much damaged by solution, or dissolving away by the fluids of the mouth. In placing it into a cavity use first the softer portion of the prepared mass, and afterward that which is harder, being careful to press it firmly against the walls of the cavity, and after insertion let the filling be finished by a careful rubbing down. When he saw many using it as first mentioned, he was not surprised at their reported failures. When put in as if it were wet sand it will be dissolved out. He had found it very serviceable in large cavities where amalgams are supposed to be necessary. The cavity should be carefully and thoroughly prepared, and every step in the progress should be taken with the utmost care.

He described a plan for filling large cavities on the grinding surfaces, which he had found very satisfactory. He could recall but one case of failure, and that resulted from the tooth breaking, and not from the work giving way. He prepared a gold cap, about No. 30, of Stubbs gauge plate, making the plate usually by melting fragments from old foil. He prepared the cap so as to fit the mouth of the cavity, and on its lower side he soldered two or three anchors, usually in the shape of old platinum rivets. Then he would fill the cavity with the oxyphosphate, and before it hardened, press the gold cap to its place, and hold it till the anchors were secured by the hardening of the filling. This, said he, makes a good tooth to which there can be no objection, as in the case of amalgam; and it is not costly, either in time or material.

DR. RUNYAN said that in purely crown cavities this mode gave but little trouble. In compound cavities he had so shaped the cap as to have it extend down to the cervical border.

DR. TAFT said in such cavities, he would use tin or Hill's stopping at the cervical portions.

DR. RUNYAN said that with the cap over the side, as he had just described, he had seen cases last, in good condition, for five or six years.

DR. BERRY commended Dr. Taft's idea with the oxyphosphate. Mix so as to have it rather moist at the beginning, and use it harder and dryer as the work progresses. He said that cavities should be absolutely dry for either gutta percha or oxyphosphate fillings.

DR. N. S. HOFF thought that with the plastics in general, we fail often in the bad formation of the cavities. All compound cavities he filled by using a matrix, made of copper wire hammered so thin that it would pass readily between the teeth, and he easily wedged so as to conform to the shape of the tooth. The rubber dam can be pushed down so firmly below the cervex as to assure dryness. He suggested, also, that the oxyphosphate fillings should not be polished down after hardening, as the surface was thus rendered porous. In using this plastic, he tried to have his cavities of a spheroidal shape, as he believed all plastics tended to assume a globular form.

DR. BERRY used mica between the teeth in filling compound cavities; and if the filling was amalgam, he left the mica till

sure the mercury of the filling would not attach itself to a filling in an adjacent tooth. Dr. B. spoke of a very black amalgam filling that had lasted for many years, perfectly preserving the tooth all the time, and as it was made of the old fashioned "copper amalgam" he attributed the excessive blackness to the presence of copper.

Dr. WATT doubted the influence of the copper in causing the blackness. He knew of no compound of copper, likely to be formed in the mouth, giving this color, while compounds of silver and mercury very likely to be so found are jet black.

Dr. C. H. JAMES said that to fill with oxyphosphate and cap with gold foil was good practice, and made nicer work than the plate used as described by Dr. Taft.

Dr. TAFT said it was easier to make the plate, and required less skill. He referred to a suggestion of Dr. Adams, (overlooked by this reporter) in which he filled partly with oxyphosphate, then added Robinson's Fibrous Filling, and finished with gold. He said the oxyphosphate might have been continued, allowing it to be capped with gold after hardening. But he regarded it good practice to mix the oxyphosphate and Robinson filling, and said that such filling should be finished at once by the instrument, and not touched with anything else afterwards.

Dr. BETTY inquired if it was not a good plan to polish such fillings with heated talc.

Dr. WILSON said that oxyphosphate would not last in some mouths, but would give way almost immediately. If it were uniformly as durable in all mouths as it is in some, he would never use amalgams, nor even gold. He sometimes used amalgams, and claimed that in using them, as much care is required as in using gold; but he would not say they are as good as gold. When decay takes place at the cervical borders of cavities filled with gold, especially in bicuspid, he had found it successful, and he thought good practice, to patch these defects with amalgams. For children's teeth gold is often impracticable, and he would not use amalgams, but rely on oxyphosphate, or gutta percha, where tin could not be used satisfactorily.

Dr. TAFT was asked for advice in cases known as "cupping," or erosion. He said if the process is active—going on—the surface should be shielded as soon as possible. When the enamel stands up high, if thin and weak, it should be cut away, but if

thick and strong, it might remain, and be covered over by the cap.

He spoke of the great importance of preserving the teeth of children. As in cases of erosion just alluded to, such has its own rule. A child's tooth is to be treated according to the length of time it is yet to be used. It would not do to dismiss children with an injunction to call again by the time they are twelve or fifteen years old. They must be seen every three or six months, or their teeth will be lost.

DR. SILLITO inquired as to the treatment of fissures. Should they be filled whether decayed or not?

DR. TAFT replied that circumstances must govern. If there has not been perfect union of enamel at the bottom of a fissure, he would fill it. In all cases where a pocket is left that will retain food or mucus, in spite of the tooth-brush, he would fill.

DR. WILSON agreed with Dr. T. as to the importance of frequent attention to the teeth of the young.

CASES IN PRACTICE.

DR. MURRAY reported a case in which an upper molar was badly decayed, with the body of the pulp dead, but there was still vitality in the canal of the buccal root. He attempted to remove this portion, but the pain was unbearable. He applied a four per cent. solution of cocaine, and the insertion of a sharp pointed probe gave no pain whatever. As an experiment he then waited till the effect of the anæsthetic had passed off, and the instrument caused severe pain as at first. He re-applied the medicine, and waited for five minutes, and then readily removed the contents of the canal without any pain whatever.

DR. BERRY spoke of an operation on a physician, which he said hurt so badly he could not endure it. He must have cocaine. Not having the drug at hand, he applied water, and the result was perfectly satisfactory, the patient declaring there was no pain.

DR. WATT supposed that the contradictory reports in reference to the use of cocaine could be partly explained by accidental mistakes in preparing the article. Many of the most valuable fluid extracts are often found useless, because the active principle is decomposed, or destroyed in the preparation, frequently,

perhaps, by using too high a degree of heat. There is too much success, he said, with cocaine to warrant the conclusion that a little water will be found a substitute for it. As the extraction of a tooth is the most painful operation known in surgery, it is important to have the pain abated if it can be done with safety. There is evidence he said, that there is such a thing as physiological anæsthesia, and this is the goal we are to strive for; because that which is only physiological, and not pathological, is not ordinarily dangerous. One proof of this condition has been referred to before, and possibly in this society. You may all remember that the friends of Dr. Livingston identified his remains by an artificial joint in one of his arms. This had been caused, many years before, by a wounded lion crushing his arm, biting it back and forth from his shoulder to his elbow. And all the time he was so composed that he could describe the surrounding circumstances, and yet firmly declares that he felt no pain during the attack. And this is plainly hinted at in ordinary incidents of life, as every schoolboy knows that when he is fighting mad, a kick or a blow scarcely hurts him. And many soldiers during our civil war were severely wounded, without knowing it at the time. He dressed the hand of an Iowa soldier whose left hand had been mangled by a minnie ball, while he was loading, and as he could no longer shoot he was taken to the rear, where it was found that he had received four wounds previously, yet had continued to fight in ignorance of his mishaps. This can be explained only on the theory of physiological anæsthesia. He thought it possible that a condition somewhat similar was sometimes obtained by using the galvanic current. He had experimented very extensively with the battery in extraction, and in many cases the operation was rendered painless, while in others the pain seemed to be increased. He had given up the battery in disgust, because he could find out nothing to guide him in its use.

DR. BRADLEY spoke of using English stock ale in extracting. He had a case of a young lady who was not fit to take chloroform. He was not willing to give her whisky or brandy. The physician who was with her said stock ale was good in such cases. He got it, and gave her two glasses of it,—the amount the bottle contained. She began to get drowsy. The man said she was ready. Two teeth were to be extracted. Both were bad. One was a very firm molar, and the other was in an inflamed socket.

As soon as her accompanying physician said she was ready, he extracted, and she never flinched,—acted as if the operation was painless.

He had experience with stock ale in four cases, and was favorably impressed with its use. In a second case he gave a lady two glasses of stock ale, and it was a half hour before she seemed to be in the right condition for the operation. She began then to appear drowsy, and he extracted. One tooth was badly exostosed, but she made no complaint. Another was a very firm cuspid, which was extracted with some difficulty, and the whole case was quite satisfactory. After the operation she said she felt first rate, and that the pain amounted to nothing.

DR. BERRY reported a case in which he gave a lady a dose of brandy, and removed six teeth, apparently without pain to the patient, who thought at the time and continued to think that he had given her chloroform.

AMERICAN MEDICAL ASSOCIATION.

SECTION ON DENTAL AND ORAL SURGERY.

Thirty-sixth Annual Meeting at New Orleans, La., April 28, 1885.

[Reported for the JOURNAL.]

THE General Meeting of the Association, though not as large as usual, was very interesting and profitable. Something over six hundred members were registered from all parts of the country, but this number would have been doubled had the place of meeting been more centrally located, or the time a month earlier. The weather was very warm and oppressive, which made the attendance upon the various sections somewhat less than it would have been under more favorable circumstances. The profession and citizens of New Orleans, however, did all in their power to make our stay among them enjoyable.

The local gatherings and receptions were particularly pleasant and were participated in very generally by the members of the Association and their lady friends.

The sessions of the Section on Dental and Oral Surgery were held in Grunewald Hall, each day commencing at 3:30 p. m.

The section was called to order on Tuesday afternoon by Dr. J. S. Marshall, of Chicago, Ill., who stated that the officers of the section were both absent, Dr. W. W. Allport, Chairman, being detained at home through illness, and Dr. E. C. Briggs, the Secretary, by professional engagements. It would therefore be necessary to elect a Chairman and Secretary. On motion of Dr. A. E. Baldwin, of Chicago, Dr. Jacob S. Williams, of Boston, Mass., was unanimously chosen Chairman *pro tem*.

Dr. Williams on taking the chair stated that the absence of the Secretary was entirely unavoidable. On motion of Dr. Geo. Friederichs, of New Orleans, Dr. John S. Marshall, of Chicago, was elected Secretary *pro tem*. The minutes of the last sessions of the section having already been published in the Journal of the Association the reading of them was dispensed with.

On motion of Dr. A. E. Baldwin, the privileges of the floor were extended to those gentlemen present and practitioners of dental surgery who were not members of the Association.

DR. JOHN S. MARSHALL, of Chicago, Ills., then read a paper entitled :

COCAINE IN DENTAL SURGERY.

The following is an abstract of the paper :

The hydrochlorate of cocaine, like all new remedies which have given promise of mitigating the sufferings of mankind, was hailed with enthusiasm, and it is fast gaining a firm foothold in certain lines of practice as a local anæsthetic, notably in operations upon the eye and upon mucous and serous tissues.

On the other hand, with the dental surgeons hydrochlorate of cocaine has lost much of its interest from the fact that it has proved a disappointment where it was hoped that it would be of the greatest benefit, viz., as an anæsthetic or obtunder of sensitive dentine; and now that the enthusiasm over the drug has waned and we begin to investigate its claims with cooler heads and less biased judgment, many of the published accounts of its wonderful effects upon sensitive dentine, and other tissues of the teeth, it would seem must have originated very largely in the imaginations of the writers rather than that they were clinical facts. New forms of the drug, however, have been more recently introduced which give promise of better results, and my excuse for presenting a paper upon the subject of cocaine is to call your

attention especially to the citrate of cocaine by presenting a series of experiments made with the hydrochlorate, the oleate and citrate, and then leave you to judge which gives promise of being the most reliable local anæsthetic or obtunder of sensitive dentine.

In operations upon the mucous membrane of the mouth there seems to be little choice between any of these forms, but upon sensitive dentine and pulp tissue it will be seen by the following experimental cases that the citrate is much more reliable than either of the others. The cases selected were the first ten upon which each of these forms of cocaine were tried.

EXPERIMENTS WITH THE HYDROCHLORATE OF COCAINE—SUMMARY
OF CASES.

Case.	Age.	Structure of the teeth.	Diseased condition.	Local anæsthetic.	Strength of solution—per ct.	Number of Applications.	Immediate Effect.	Time Minutes.	Remarks.	Remarks.
1	30	soft	sensitive dentine.	Foucar's sol.	2	2	none.	10	Sensitiveness greatly relieved.	
2	15	soft	sensitive dentine.	"	2	4	none.	20	No anæsthetic effect.	
3	24	medium	sensitive dentine.	"	2	3	none.	15	No anæsthetic effect.	
4	24		pyorrhea alveolaris.	"	2	2	none.	10	Operated with little pain. Gums completely anæsthetized.	A previous operation without the cocaine had been very painful.
5	50		inflamed pulp.	Merck's sol.	10	4	none.	20	No anæsthetic effect.	Applied for extirpation.
6	26	medium	sensitive dentine.	"	10	3	none.	15	Slight anæsthetic effect.	
7	28	dense	sensitive dentine.	"	10	3	none.	15	No anæsthetic effect.	Drying the cavity with hot air seemed to produce a slight anæsthetic effect.
8	14	very soft	sensitive dentine.	"	20	3	none.	15	Slight anæsthetic effect.	Drying the cavity with hot air seemed to increase the anæsthetic effect.
9	16	medium	sensitive dentine.	"	20	3	none.	15	Slight anæsthetic effect.	Drying the cavity with hot air seemed to increase the anæsthetic effect.
10	24	medium	sensitive dentine.	"	20	4	none.	20	No anæsthetic effect.	

Hydrochlorate or muriate of cocaine.— $C_{17}H_{21}NO_4HCl$ —
With this form of cocaine I first used a 2 per cent. solution prepared by Foucar, but after several trials, more or less failures, I came to the conclusion that a dense tissue like dentine absorbs so

slowly that a sufficient quantity of 2 per cent. solution could not be taken up to produce anæsthesia, and therefore procured 10 per cent. and 20 per cent. solutions prepared by Merck, but was unable to obtain any better results with these than with the 2 per cent. A 40 per cent. solution has been recommended; this I have not tried, but from the experience of others who have experimented with it, it seems to have no advantage over the weaker solutions.

In cases Nos. 1 and 2 the rubber dam was not applied, and in case No. 4 of course there was no use for it; in all the others, after syringing the tooth with tepid water and removing all loose debris, the dam was adjusted, the cavity dried and the cocaine solution applied by means of a pledget of cotton.

EXPERIMENTS WITH THE OLEATE OF COCAINE—SUMMARY OF CASES.

Case.	Age.	Structure of the teeth.	Diseased condition.	Local anæsthetic McKesson & Robbins.	Strength of Oleate—per ct.	Number of Applications.	Immediate Effect.	Time minutes.	Results.	Remarks.
1	12	-----	abscessed root.	oleate.	-- 5	3	none.	12	Pain on extraction.	Gum anæsthetic in 8 minutes.
2	40	-----	abscessed root.	"	-- 5	2	none.	20	Pain on extraction.	Gum anæsthetic in 7 minutes.
3	60	...dense...	inflamed pulp.	"	-- 5	3	none.	30	No anæsthetic effect.	Applied normal oleate for 15 minutes with no effect. Application made for extirpation.
4	30	...medium.	sensitive dentine.	"	-- 3	3	slight pain.	25	No anæsthetic effect.	
5	25	...soft...	sensitive dentine.	"	-- 5	1	none.	30	No anæsthetic effect.	Applied normal oleate for 15 minutes with no effect.
6	11	...soft...	sensitive dentine.	"	-- 5	3	none.	20	No anæsthetic effect.	The hot air blast produced slight obtunding effect.
7	14	...medium	sensitive dentine.	"	-- 5	3	none.	20	Slight anæsthetic effect.	
8	40	-----		"	-- 5	2	none.	30	Gum lost sensation in 15 min's. Root and border of alveolus quite sensitive.	Application made preparatory to fitting a gold band to the root of a central incisor sup.
9	35	-----	pyorrhœa alveolaris.	"	-- 5	2	none.	15	Operated with little pain.	
10	42	...dense...	sensitive dentine.	"	-- 5	2	none.	20	Slight anæsthetic effect.	

Oleate of Cocaine.— $C_{17}H_{21}NO_4$ $C_{18}H_{33}O_2$.

Normal oleate of cocaine contains from 48 per cent. to 52 per

cent. alkaloid cocaine. Messrs. McKesson and Robbins kindly furnished me with samples of the normal and 5 per cent. oleates manufactured by them for this series of experiments.

In all the cases of sensitive dentine, and the one with an exposed pulp, the rubber dam was adjusted and the cavity cleansed and dried, and the oleate applied on a pledget of cotton.

In the others the gums were dried and the oleate painted over the surface and the parts kept free from moisture during the operation by the use of napkins.

EXPERIMENTS WITH THE CITRATE OF COCAINE—SUMMARY OF CASES.

Case.	Age.	Structure of the teeth.	Diseased condition.	Local anæsthetic, McKesson & Robbins.	Amount of citrate used, gr.	Number of Applications.	Immediate Effect.	Time minutes.	Results.	Remarks.
126		soft....	sensitive dentine.	"citrate.	1-16	1	slight pain.	10	Complete anæsthesia.	Lasted about 1 hour.
219		medium....	sensitive dentine.	"	3-16	2	slight pain 5 m.	15	Complete anæsthesia.	
335		soft....	sensitive dentine.	"	5-16	3	severe pain 20 m.	30	Partial anæsthesia.	Operation quite painful.
420		medium....	sensitive dentine.	"	1-16	1	slight pain 3 m.	10	Complete anæsthesia.	
530			inflamed pulp.	"	2-16	1	none....	15	Complete anæsthesia.	Extirpated the pulp without pain.
616		soft....	odontalgia.	"	7-16	3	patient suffering before citrate was applied ..	30	No effect.	Patient relieved in five minutes by the application of oil of cloves, & sulp. morphia $\frac{1}{8}$ gr.
718		soft....	sensitive dentine.	"	2-16	2	slight pain 5 m.	15	Complete anæsthesia.	
824		dense....	sensitive dentine.	"	1-16	1	slight pain 3 m.	10	Complete anæsthesia.	
923		soft....	sensitive dentine.	"	2-16	2	slight pain 5 m.	30	Partial anæsthesia.	Operation slightly painful.
1027		dense....	sensitive dentine.	"	1-16	1	slight pain 3 m.	10	Complete anæsthesia.	

Citrate of Cocaine.—($C_{17}H_{21}NO_{12}$) $H_3C_6H_5O_7$. This form of cocaine was first manufactured and recommended by Merck of Darmstadt as likely to prove most satisfactory as an anæsthetic for sensitive dentine. My attention was first called to it by a letter in the *Journal of the American Medical Association* written from Weisbaden, December 4, 1884, by Dr. Sarah Hackett Stevenson. I at once took steps to procure a sample of Merck's

preparation, but, failing in this, Messrs. McKesson and Robbins kindly prepared a sample for me and this I had made into pills of one-fourth grain each.

The excipient used was gum tragacanth dissolved in glycerine. This readily dissolves on being moistened with tepid water and therefore makes a very convenient vehicle for the introduction of the citrate into the cavity. My method of using it is as follows: Remove all loose debris from the cavity, and wash it out with tepid water, then adjust the rubber dam, divide a pill into two or four equal parts and place one of these in the bottom of the cavity and cover it with a pledget of cotton moistened with tepid water. The excipient soon dissolves and flows over the surface of the cavity. In five minutes I test the dentine and if still sensitive make a second or third application if necessary.

Since recording the above cases I have had still further opportunity of testing the merits of the citrate of cocaine. In several of the cases of sensitive dentine where the hydrochlorate and the oleate failed I have since used the citrate with much better results.

From the cases recorded it will be noticed that the citrate is much more reliable as an anæsthetic or obtunder of sensitive dentine than either the hydrochlorate or the oleate. Whether this is due to the special form of the drug or its greater concentration as used in the cavity I am unable to say.

It also seems to act much more promptly whether applied to sensitive dentine, pulp tissue or mucous membrane.

In every case where it was applied to sensitive dentine, it caused a sharp, stinging sensation, similar to that produced on drying a cavity with spunk or bibulous paper, or the application of mild solutions of chloride of zinc, but this usually passes away in from two to five minutes. Why the application of the citrate should produce pain I cannot explain, unless it is caused by the rapid absorption of the solution by the fluid contained in the tubuli; for the citrate has a strong affinity for water. Why case No. 5, in which the citrate was applied for the extirpation of a pulp, should be so successful, and the next case, in which it was used for the relief of odontalgia, should prove such an utter failure is to me unaccountable.

The record of such a small number of apparently successful

cases does not, of course, determine the value of the citrate as a local anæsthetic, but I trust they will be useful in calling attention to this form of the drug and stimulate others to further test its merits.

Compilations.

"Gather up the Fragments."

MEDICAL EDUCATION.

As it is during this quarter that the new graduates in medicine begin to appear, their applications have been watched with more than usual interest at this time, as affording some clue to the effect of the new schedule of requirements.

Although 78 medical colleges out of 116 in the United States claim to have exacted, at their last session, a preliminary education requirement as a condition of matriculation, the evidence afforded by the applications thus far received goes to show that in too many cases the standard of such education must be very low.

From the graduates of one college which announces that a preliminary examination will be held in accordance with the requirements of the State Boards, five out of the seven applications received contain such intrinsic proof of defective preliminary education, that they were presented to the Board.

The following is a verbatim copy of a typical specimen of the applications submitted :

"I send to you my Diploma for your approval the degrees of Doctor of Medicine was conferred upon me at the ——— annual Commencement of the ——— ——— ——— held on Teusday Mar the ——— 1885. you will pleas return as soon as possiabl and oblige. Enclosed you will find the fee for Registration

Yours truly

P S if the fee is not sufficient I will forward the balance if you notify me by card I understood the fee was one Doller I presume the enclosed Papers will be all that will be requierd. return Diploma to Me at ——— Illinois ——— co"

In another case the first letter, dated March 9, contained a request for a blank affidavit, which was, of course, immediately

forwarded. The signature to the affidavit, received March 14, was so evidently not by the writer of the first letter, which was unexceptionable in every respect, that some delay occurred, pending inquiry. Under date of March 30, the applicant, in a handwriting differing both from that of the letter of March 7, and from the signature to the affidavit, writes :

"I send you my Deploma today by Expr. and letter of recommendation. I sent fee and affidavit Bout three weeks since. I would like to know at once whether or not to expect a Certificate. you will Pleas return Deploma by Exp."

It is possible that this young gentleman,—who, by the way, states that his school of practice is "Alapathy," passed his examination as he conducts his correspondence, that is, by proxy. —*Ills. State Board of Health Proceedings in Cin. Lancet & Clinic.*

CANNABIS INDICA.

BY WM. D. KEMPTON, D.D.S., CINCINNATI.

SINCE the last meeting of the Mississippi Valley Association of Dental Surgeons I have been experimenting with this agent in extracting teeth. I had Mr. William Karrmann prepare a fluid extract, each ounce of which represents the active principle of an ounce of the herb. I was somewhat skeptical in regard to its efficacy as I had had so many failures with other much-lauded remedies, but after using it in over 150 cases, I am satisfied that very often it enables the operator to extract teeth "*without pain,*" and very little pain in nearly all cases.

Whilst I do not pretend to explain its *modus operandi*, yet I have observed that when applied to the gums it produces a peculiarly anæmic appearance in from five to twenty minutes. It is then, and *then only*, that anæsthesia is present. In from three to five per cent. of cases, however, this effect is not produced, and consequently there is no anæsthesia.

To apply it I made a clamp of brass wire, on the principle of dressing forceps that open when pressed, with a loop on the end of each beak, in which a pledget of cotton is drawn and saturated with the agent. This is allowed to remain in contact with the gum for five minutes, is then removed and a few drops added,

the apparatus replaced, and so on till the desired effect is produced. The patient should hold his head over the spittoon to allow the surplus agent and the copious flow of saliva to escape. —*Dental Register*.

Editor's Specials.

"Write the Vision and make it plain."

INFINITESIMAL TEETH.

DOCTOR D. C. LANE of Kansas City has sent us the smallest specimens of supernumerary teeth that we have seen. The crowns of two of them, shaped like perfect bicuspid are smaller than mustard seeds. The Doctor gives an account of them as follows: The lady had a full complement of permanent teeth all nicely erupted except the lower left third molar; and of this the anterior buccal cusp was visible. The gum appeared thickened, and over the anterior lingual cusp one of the specimens was found and removed. This was drilled into and the pulp and its chamber were found in their natural positions and normal conditions. This tooth was removed with an excavator, and on probing further into the gum, the other two were found and removed with the same instrument. The general form of them is like bicuspid, they are two or three lines in length, about one line in diameter. They have all the constituents of teeth in due proportion, enamel, dentine, cementum, pulp, and pericemental tissues, in normal position and in ordinary relative density. Two, like well-shaped bicuspid, adhere together, but could be readily separated.

Societies.

"Wherewith one may edify another."

AMERICAN DENTAL ASSOCIATION.

THE twenty-fifth annual meeting will be held at Minneapolis, Minn., commencing August 4, 1885.

The present prospects are that the meeting will be an unusually large one. The railroads offer unprecedentedly low rates. Tickets for the round trip from New York to Minneapolis and return will be furnished for \$24. Round trip from New York to Chicago and return \$18. Round trip from Chicago to Minneapolis and return \$6. At present it will be necessary for those wishing these tickets to secure them in Chicago, later we may be able to make arrangements by which they can be secured at different points east. By sending checks for tickets to the Chairman of Committee of Arrangements the tickets will be promptly forwarded. Negotiations are pending for rates from other points that the committee anticipate will accommodate all, and more definite information will be given in later journals and also in a circular sent to every member. The hotel rates will be as follows: West Hotel, \$4 a day; Nicollett House, \$3 a day; National Hotel, \$2 a day.

It is hoped that members having any new facts or ideas in regard to theory or practice will come prepared to present them in connection with the section work. Any one having anything new in the way of appliances will be given an opportunity to demonstrate their use during the half day that will be devoted to clinics.

Attractions and Excursions:—Come equipped with guns and fishing tackle, while the interest and benefits of the meeting, the attractions of the trip, and the beautiful city where we meet are too well known to need special mention. It may not occur to all that they will find in Minnesota one of the finest of hunting and fishing countries. Minnesota is especially famous for its prairie chickens and grouse shooting and its fine fishing grounds. It is estimated that there are not less than ten thousand lakes dotting the State.

If one wishes a still greater variety of scenery, to see a new wild and picturesque country to draw out the big brook trout, the black bass and the mighty muskalonge from the cold waters of the Lake Superior region, in fact, to enjoy the finest fresh water fishing in the world, a round trip ticket from Chicago to Ashland and return will be furnished them for \$10.

A still greater attraction (if one more were needed) is offered in shape of ten days' excursion to the far famed Yellowstone National Park immediately upon the close of the Association,

provided a sufficient number send in their names to warrant the securing of special cars and rates. The committee believe that when so far on the way as Minneapolis many will wish to avail themselves of this opportunity of seeing the grandest scenery in the world. The entire expense for the round trip from Minneapolis including rail transportation, and Pullman sleeping car fares, meals on Northern Pacific dining cars, hotel accommodations, five days in the Park and stage transportation, will be \$120. A circular describing the magnificent scenery in full, will be sent to every member of the Association at an early day. Others than members who may contemplate going will receive the same by making application for it. Come one, come all and bring your wives along. It will be a trip that ladies will especially enjoy. Those wishing to go to Yellowstone Park will please send in their names at an early day that all arrangements may be speedily and satisfactorily completed.

For further information address Chairman of Committee of Arrangements,

J. N. CROUSE,

2101 Michigan Ave.,

Chicago, Ill.

MAD RIVER VALLEY DENTAL SOCIETY.

ANNUAL MEETING, DAYTON, O., TUESDAY MAY 19, 1885.

[Reported for the JOURNAL.]

THE president, Dr. Geo. L. Paine, called the society to order at 10 o'clock A. M. in the parlor of Phillips' House. Dr. E. G. Betty, acted as secretary *pro tem*. The subjects discussed were:

1. Dental Economics—papers by Dr. J. H. Paine, Middletown, and Dr. A. Berry, of Cincinnati.
2. Different Materials for, and Methods of Filling Teeth. Paper by Dr. E. G. Betty, of Cincinnati, on Oxy-Phosphates.
3. Cases in Practice. No papers.

Dr. Geo. Watt, of Xenia, read a paper (published in "Editor's Specials" of the June number) on "No New Thing Under the Sun," and the secretary some anonymous verses on "Extracting Free." [The papers and discussions will be found on another page.—ED. JOURNAL.]

Members present at this meeting: From Cincinnati (5), ‡A. Berry, ‡J. Taft, ‡E. G. Betty, *†N. S. Hoff, *†C. H. James. Dayton (8), ‡L. C. Adams, ‡C. Bradley, ‡C. Elson, ‡E. T. Grosvenor, H. A. Hubbard, ‡A. T. Whiteside, *†A. R. Cuyler, *†W. E. Tizzard. Xenia (3), ‡Geo. Watt, Geo. L. Paine, ‡W. H. Sillito. Springfield (2), ‡J. C. Oldham, ‡F. C. Runyan. Middletown, ‡J. H. Paine. Delphos, *†C. A. Murray. Van Wert, *†Homer Ainsworth. Celina, *†C. C. Scott. Jamestown, *†W. H. Creighton. Richmond, Ind., *†W. N. Wilson. Total 24. Including visiting members of the profession the attendance was about 35.

The secretary read a letter from a former member of the society, Dr. N. W. Williams, now of Geneva, Switzerland, in which he heartily wished the society and its members success and reminded them that they were not forgotten.

On motion of the secretary the annual dues were reduced to fifty cents, the initiation fee remaining at one dollar.

The officers elected were: President, C. Bradley, Dayton, O.; Vice President, F. C. Runyan, Springfield, O.; Secretary, L. C. Adams, Dayton; O.

The retiring secretary, Dr. W. H. Sillito, of Xenia, made the following report of the finances of the society:

Received for dues 1882, 3, 4 and 5	- - - -	\$53.00
Paid for printing, stationery, etc., 1882, 3, 4 and 5	-	36.09
Balance on hand	- - - - -	\$16.91

We have examined the accounts and find them correct.

Auditing Committee { N. S. HOFF,
 { E. G. BETTY.

Adjourned to meet in Dayton, O., Tuesday, May 18, 1886.

WISCONSIN STATE DENTAL SOCIETY.

THE fifteenth annual meeting will be held at La Crosse, commencing Wednesday, July 29, 1885, and continuing three days. The profession of Wisconsin and other states are cordially invited to attend.

* New members elected at this meeting.

† Paid dues each \$1. ‡ Paid dues 50 cents each.

The State Board of Dental Examiners will meet at the International Hotel, La Crosse. on Tuesday, July 28, and it is requested that all applicants for license report to the Board on that day if possible.

C. A. SMITH, *Chairman Ex. Com.*

EDGAR PALMER, *Sec. Exam. Board.*

IOWA STATE DENTAL SOCIETY.

THE twenty-third annual meeting was held in Des Moines, May 5, 6, 7 and 8. The attendance was the largest the society ever had. The papers and discussions, and the clinics were very interesting and instructive. The membership was increased by twenty-seven.

The officers elected were as follows:

President, A. MORSEMAN, Iowa City; *Vice President*, R. L. COCHRAN, Burlington; *Secretary*, J. B. MONFORT, Fairfield; *Treasurer*, J. S. KULP, Muscatine.

The transactions of the meeting will be issued in pamphlet form by the society.

PENNSYLVANIA STATE DENTAL SOCIETY.

THE twenty-seventh annual meeting will convene at Cresson Springs, Tuesday, July 28th, 1885, at 10 A. M., and continue in session three days. Rates at the Mountain House, to delegates and their families have been reduced to three dollars per day, dating from Saturday, July 25, and continuing as long as desired. Orders for special excursion tickets will be issued over all lines of the Pennsylvania and A. V. R. R. Usual excursion rates on other roads. Orders or general information can be obtained by addressing

W. H. FUNDENBERG, *Cor. Sec'y.*

958 Penn. Ave., Pittsburg, Pa.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

THE next regular meeting will be held at Minneapolis on Tuesday, August 4, 1885. It is hoped there will be a full representation.

GEO. H. CUSHING, *Sec'y.*

Books and Pamphlets.

KANSAS LAW JOURNAL.—We have received a supplement to the above journal for May 2, 1885, containing the full text of the State laws relating to Prohibition, Pharmacy, Dentistry and Board of Health with names and addresses of the various boards. It may be had by mail, post-paid, for 25 cents, of the publishers, G. W. Crane & Co., Topeka, Kansas.

Our Aftermath.

SALICYLIC ACID A CURE FOR TIC DOULOUREUX.—We frequently meet in our practice cases of tic douloureux, that often so exceedingly painful neuralgia of the fifth nerve, where an operation seems to promise the only radical cure. If we hear of a remedy which is said to have the same effect as the surgical interference, we become doubtful; but if no less reliable an authority than Prof. Nussbaum assures of the fact, our hope increases. Recently a number of such cases had been sent to N. for the purpose of having the operation performed, and, after a number of carefully instituted experiments, this great surgeon recommends a trial with salicylic acid before proceeding to stretching or resection of the nerve. In all the recently-sent cases he first tried this remedy, and he found it in every one a radical cure; not only a palliative effect, but really an utter disappearance of the painful disease was the result in every case. Especially in cases of rheumatic nature, N. is positive of having discovered in salicylic acid a specific for tic douloureux. He administered the drug in the following manner: R.—Acidi salicylici, gr. $3\frac{1}{2}$; sodæ salicylatis, gr. 32; M. ft. pulv. Within 24 hours the patient takes from four to six of such powders.—*Med. and Surg. Reporter*.

THE ANÆSTHETIC ACTION OF STYRONE.—Dr. S. A. Popoff has made experiments with styrene, a substance first described by Dr. Beach (*Boston Medical and Surgical Journal*, July, 1880), and obtained from storax and balsam of Peru. Aside from its powerful antiseptic properties, he found the following in experimenting upon frogs and dogs. 1. Hypodermic injections of one milligramme in frogs caused complete anæsthesia dependent on paralysis of sensory nerves. 2. A large dose caused convulsions followed by motor paralysis. 3. The intravenous injection of five to eight centigrammes per kilogramme of weight in dogs caused also anæsthesia. The drug was found to depress the respiratory centre and at times the temperature.—*Mediz. Obozr.*

OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. V.

AUGUST 1, 1885.

No. 8.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

INDIGESTION OR DYSPEPSIA.

BY GALEN, XENIA, O.

UNDER this name we find a number of morbid conditions of the stomach, chronic gastritis, irritations of all kinds, whether vascular or nervous, and different forms of gastric depression or debility.

Many errors have crept into practice on account of this confusion in diagnosis, and serious trouble has been occasioned thereby, both to practitioner and patient. A set of rules applicable to a certain class of morbid conditions, have been extended to certain other morbid conditions wholly different, under the mistaken idea that all stomach troubles arise from the same source. The name is unfortunate as it applies to a result rather than to a particular pathological state.

It is questioned whether there is any distinct gastric disorder not included, under other recognized titles to which the name dyspepsia properly belongs. Broussais and his disciples

referred all those affections usually called dyspepsia, to gastric irritation or inflammation. We have cases in which no general rules or laws can be applied, and yet they are clearly cases of indigestion, and require treatment. It often occurs that we have cases that puzzle us to trace each symptom to its origin, and the end is thus perverted if not set aside; yet unsatisfying as the treatment is, we persevere, and the objective point is reached by a mode that we are unable to explain. Without doubt there is a depressed condition of the stomach, as regards its action, and a diminution of its powers that give rise, in time, to a pathological condition, which we can very safely rank as a disease. It is this condition that we shall call *dyspepsia*, and will endeavor to confine ourselves to its discussion.

We cannot have a depressed condition or even the least portion of debility without some form of irritation. This may or may not be accompanied with inflammation. When dyspepsia actually occurs, the symptoms are of a mixed character, though a careful observation will usually determine whether they belong to the disease or are produced by an association of affections. Dyspepsia generally is not seen by the physician until it has been present for some time. The symptoms presented vary greatly in different cases.

The first that is noticed by the patient of which he complains chiefly, is an uneasiness in the epigastrium, which is not pain, but often a feeling worse than pain. This sensation is diffused over the epigastric region, extending oftentimes to the hypochondre, to the chest, especially to the left side, and even to the shoulder. In some cases the uneasiness is greatest when the stomach is empty, in others after eating. We have a burning, gnawing sense accompanied by fullness and weight, occasioned by a vascular irritation, and sometimes we find spasmodic and gastric pains, with a sense of distension from flatulence. This is often accompanied by eructations, which generally give relief. In debility of the stomach we often find a sense of tenderness, which is increased or diminished by deranged innervation, and in those cases where certain substances are swallowed, acute pain follows, and the tenderness of the epigastrium is increased. The appetite is generally impaired, and is sometimes almost wanting, constituting *anorexia*. In some we have the morbid craving appetite, or one perverted in such a manner as to demand articles of food

which our judgment tells us is entirely inappropriate and deleterious. The desire for food is seldom normal, but in place of this we hear them speaking of a sense of hollowness and a sinking at the epigastrium, with a desire for relief, which is generally accomplished for the time by food. Thirst is often present, and fluids do not entirely allay it, for the irritation cannot be allayed by fluids alone. Eructations of wind, and regurgitations of food or chyme into the mouth, or sour, or bitter, or acrid, or oily substances often accompanied by the taste of the food taken at the previous meal, are some of the symptoms of this affection.

These phenomena belong more especially to the stomach. We have other symptoms having their seat elsewhere that depend either on the derangements of the stomach or are produced by them as a sequence. Among these may be mentioned headache, giddiness, a heaviness of the head, a general languor, perverted vision, irregular pains between the shoulders, in the back, a feeling of coldness between the shoulders, uneasiness about the throat, a desire to clear the throat of viscid mucus, and a general uneasiness. The patient is apt to imagine that he is the victim of consumption, organic disease of the heart, or some other incurable malady. Nearly all persons suffering from dyspepsia claim they have heart disease; and it is sometimes difficult to disabuse their minds of this idea. We have a cough now and then, a sense of dyspepsia, and often melancholy impressions that prove in the end troublesome in some cases. Some sleep well, others are restless and have unpleasant dreams, and arise feeling depressed and morbid. The tongue is generally furred. Now and then we see a case where the tongue is clear, but fiery red, and known as the strawberry tongue. The mouth tastes badly in the mornings, and the saliva is sour with a tendency to keep clearing the mouth and throat of frothy mucus that seems to gather there. The bowels are nearly always constipated, unless we have a complication of chronic enteritis or excess of bile. The hepatic function is always more or less deranged. The secretion of bile is generally scanty giving rise to clay-colored stools. Again, we see dark or black color given to the passages, which are sometimes too abundant, producing in some vomiting.

The surface of the body is usually dry, and of irregular tem-

perature. The feet and hands are obstinately cold, but in some cases they are burning, and feverish, especially at night. In cases where we have debility, we find copious sweating. The urine is variously affected, sometimes scanty and high colored, depositing a whitish sediment on cooling, again it is copious, limpid and almost colorless. The pulse in some cases is quite natural, in others disordered, being too fast or too slow or irregular. In nervous patients the pulse is irritable and excitement is sure to bring on great disorder. Either bodily or mental exercise in the morning generally produces excitement.

The above symptoms, are by no means all we find in indigestion, but they comprise the greater portion, in ordinary cases. We rarely find two persons alike, or possessing the same symptoms. At first it comes on by paroxysms, with intervals, in which no uneasiness is felt; but gradually, if not properly treated, the paroxysms increase in frequency, and are of longer duration, until, finally, the patient is scarcely without some evidence of disorder. The patient loses flesh, becomes much emaciated, with flabby muscles, sunken abdomen, a sallow skin, and anxious expression of countenance. The disease hardly ever proves fatal. In most cases the patient either recovers entirely, or only has attacks now and then, consequent upon some indiscretion of eating, or habit. In some, from the functional to the chronic, or genuine gastritis is established, and our patient succumbs to the combined influence of debility, and irritation.

The great danger from dyspepsia, is that the system being enfeebled, some intercurrent disease attacks the patient, and the combination proves too much for his strength, and death is the result. It is possible that functional disease, of the lungs, or the liver, through sympathy, may have their origin in dyspepsia. The predisposition to phthisis is often by the debility accompanying dyspepsia, favored, the same manner as from any other cause. But we never see dyspepsia as a sequence of phthisis. It is important to distinguish chronic gastritis from dyspepsia, and be able to recognize inflammation when it takes place, in the latter disease. In chronic gastritis, the pain is severe, the epigastric tenderness great, more constant, vomiting frequent, and the pulse tense and hurried. The tongue is generally red with papilla, which we do not see in dyspepsia. Hot and stimulating drinks

increase the pain, and uneasiness in the inflamed stomach, while they generally afford relief in pure dyspepsia. When the matter vomited is mucus, or blood, or like coffee-grounds, we may generally conclude that we have a case of chronic gastritis. Fever and diarrhoea are more common in this complaint than in dyspepsia. When, therefore, in a case of indigestion we find the above mentioned symptoms, there is good reason to believe that gastritis is present.

(To be continued.)

A CASE IN PRACTICE.

BY GEORGE W. KEELY, D.D.S., OXFORD, OHIO.

THE following case is presented in connection with the one produced in the May number of this JOURNAL, because it involves points of interest, showing what nature will do for our little patients, when intelligently assisted. This is the case of a girl aged ten on September 1st, 1881, the day this model was taken. Her father had regular dentures, as did all of his family. Her mother inherited a narrow arch, and very irregular teeth.

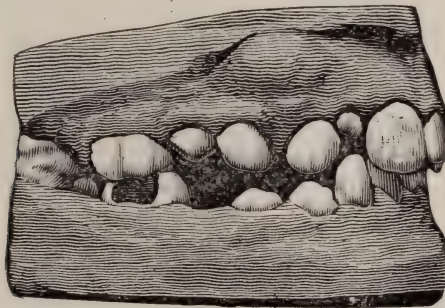


FIG. 1.

Figure 1 shows the condition of her teeth when she came to me, both arches being pretty well developed. As can be seen, she had lost all the temporary teeth on the right side except the superior cuspid. The permanent central, and left lateral were in line, and the temporary cuspid still in place, the first bicuspid in

contact with the inferior one, the first molar standing one-eighth of an inch from the bicuspid, which was probably caused by the premature extraction of the temporary molar. The second bicuspid had not made its appearance, neither had the inferior one, the first permanent molars being near the first bicuspid, and three-fourths of the crown broken down by decay. The inferior incisors were in line, but the cuspid had not yet appeared. The right superior lateral had just made its appearance, in a twisted condition. The bicuspid could be seen, the second one very much crowded. The inferior permanent cuspid, and first bicuspid were appearing, but not the second bicuspid. The first inferior permanent molar was badly decayed, like the left one, and these molars were giving the little miss great pain, being the cause of her first visit. The superior permanent molars had each two decays in the grinding surfaces, and could have been filled. In this case the extraction of all four permanent molars was indicated; and they were at once removed. The next day my brave little patient went to her home in Northern Ohio; and I next saw her in September, 1882, when the following model was obtained.

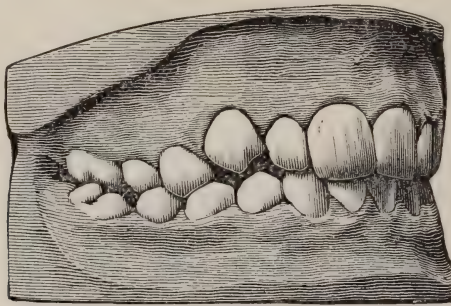


FIG. 2.

On the right, the twisted lateral had come into line, the permanent cuspid had taken the place of the temporary one, but was not fully developed. The bicuspid were in contact, and the second molars had almost taken the place of the first, and were nearly in contact. On the left side, the superior permanent cuspid was in place; and the second bicuspid and second molar were in contact, and partly developed. Below, the permanent cuspid was in place, and the second bicuspid and second molar were just appearing.

The third and last call from our patient, (now looking like a miss of sweet sixteen, and as beautiful as a rose-bud), was in September, 1884, two years having intervened since her last call, when the following model was taken.

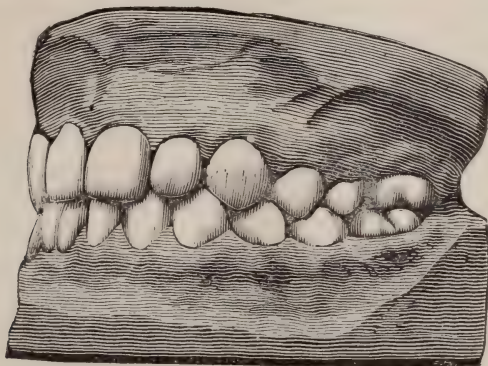


FIG. 3.

From this cut it will be seen that all the teeth are in contact, the second molar having taken the places of the first *without the slightest appearance of tilting*. As she is well developed for a girl of thirteen, I predict that by the time she is sixteen or seventeen, she will get her third molars; and as there will be ample space for them, they will be well developed, and as useful as the others.

CHEMISTRY IN LIFE AND IN DEATH.

BY GEORGE WATT.

[Read before the Xenia Academy of Medicine.]

CHEMISTRY is so boundless in its bearings, so infinite in its reachings, so constant and unremitting in its efforts, and so varied in its facts and affinities, that no human mind can grasp it in any of these various relations, nor can finite minds conceive the wide range of its possible inquiry, research or action. All will agree that its function is co-extensive with matter; but as a science it is not pent up by material barriers. Extend your thought along the pathway of the material universe till you have reached, not only the farthest star or satellite, but till that thought, hitherto a wanderer, rests on the outermost atom of cre-

ation, and still, because the containing is more extended than the contained, there must be space beyond. Now, whether or not this space is empty is known to the Infinite One,—to the possessor of all knowledge; but the only science that can investigate and report as to the presence or absence of matter therein, is called chemistry, the science that tyros propose to teach in a college course of a few weeks or months.

To gain something of an idea of the busy nature, the industry, the prying meddlesomeness of chemistry, it is best to confine our observations, for a time, to the action and influence of but a single element, as a view of the whole range would overtax our vision.

Because it is the most abundant, and perhaps the most observable, oxygen may be taken as a fit specimen to illustrate chemical action and energy.

And where shall we begin our observations? for where shall it be found? Or rather, where is it not? Most certainly it is not omnipresent; but if we ascend to the top of the highest mountain, it welcomes us in the refreshing breeze, or corrodes like a canker, in the character of ozone. Dig down into the deepest mines, or explore the most minute recesses of the secret cavern, and our presence fails even to surprise it. The oceans are its reservoirs, the clouds and the storms are its messengers, the earth is its treasure-house, and the rocks its safe-deposits. It is about us, in us, of us. If we walk, or if we work, we gain the force essential to the effort, by this wonderful agent, oft a tyrant, but now a servant, obedient to our will, combining with carbon-hydrogen compounds, which must be constituent materials of our physical bodies, and in the complex process, we find the chemical power of this element changed into vital force, and this with the mechanical force necessary to the accomplishment of the acts performed. It follows, as a matter of course, that the tissues oxidized to generate this force are devitalized, and thus we see the chemistry of death to the individual tissues, while it is the chemistry of life to the body corporeal.

This element, oxygen, gets into our bodies in two ways. It is an essential constituent of most, if not all parts of living tissues. And although it is built into our bodies in obedience to the vital processes and functions, it is ever true to chemistry,—to the laws of affinity; for no matter how many sciences are con-

cerned in our make-up, there is no warfare among them. The oxygen that becomes identified as a component of living bodies is taken in with and appropriated from the food. That taken in by respiration can never be so assimilated, but is for purposes entirely different. The oxygen taken in by breathing is stored within (or at least among) the red corpuscles, not for the building up, but for the destruction of tissues. This oxygen is used to generate, or liberate force, which may be chemical, vital, and mechanical, in turn, on the principle of correlation.

And another thought is here necessary to a clear understanding of the processes concerned. We often find oxygen an irritating, corroding agent, yet it is a leading constituent of our balmy atmosphere which fans us with its gentlest zephyrs, "Where the Wind of the West breathes its softest sigh."

It is often as docile as the tamed lion that fondles the hand that feeds him; and again it is as furious as the same lion aroused in his wrath by a taste of blood. Nothing can seem more tame than either when quiescent; but aroused, one becomes the terror of the arena, and the other the fiercest and most destructive element of the material world. Think of the gentle breezes of June at the hour when Aurora gilds the eastern sky, and you have this element altogether amiable and pacific. Think again of a condition in which by correlation of forces, heat becomes affinity, and this voracious element must have Chicago for breakfast and Boston for lunch, and at the close of Time's day will take the whole earth for his supper. And how is this all explained?

We can advance at least a step in the direction of light by calling to our aid the principle of allotropy. Some chemical agents possess at least two distinct chemical states; and these are sometimes so very unlike each other that the identity of the agent is doubted. And this is all the more likely to occur when the substance is not obvious to our ordinary observation. If memory serves, an effort was made in this Academy to illustrate what is meant by allotropy, by considering iron in its active and passive states. Be this as it may, the illustration is a good one, and will bear a second use.

It is well known that when iron is introduced into a somewhat concentrated watery solution of nitric acid, it rapidly decomposes both the acid and the water. This is true of iron in

its ordinary state, in which it is chemically active. The iron decomposes the fluids at its own expense. It is rapidly oxidized, and as atom after atom of its oxide is formed, it combines with equivalents of the remaining nitric acid, and nitrate of iron is the result. But when the iron is rendered passive before entering the acid solution, no chemical action occurs. Iron may be rendered passive by several processes; but a convenient one for those who wish to try the experiment is the following: Before immersing the iron, place it in contact with platinum, and introduce both metals in such way that the platinum first comes in contact with the acid solution. After the immersion, the platinum may be withdrawn, and the iron remains passive.

That oxygen has its allotropic conditions is evident from even slight considerations. Were it active when stored in the red corpuscles, it could not fail to burn the phosphorized fats found there, as scarcely anything is more combustible. Again, oxygen may be prepared by one of the ordinary methods, such as by the decomposition of potassium chlorate, and a strip of iron may be suspended in it, almost indefinitely, without showing signs of rust. In this state it may be rendered active by passing sparks of electricity through it; and in its active state it is called ozone.

In being set free from any of its combinations, oxygen escapes in its active state, in this obeying a general principle; for it is found by experiment that chemical reagents act with increased energy under such circumstances. They are often spoken of as being in a nascent state, when they have this increased affinity as a result of being just set free, or being just formed by combination, in the case of compounds, for it is not necessary that the agent be elementary in order to such manifestation.

It has been mentioned that the passage of electricity changes passive, or quiescent oxygen to active; and as there is always more or less electric disturbance in the atmosphere, it can never be free from active oxygen, or ozone. It follows, therefore, that oxidizable substances exposed to atmospheric influence are more or less oxidized. The oxygen is always present, and always a portion of it is ready for action. When, from any cause, electric disturbance is much increased, the proportion of ozone in the atmosphere becomes so great that the lining membrane of the air

passages is badly irritated; and while some persons are more readily and to a greater extent disturbed in this way than others, an epidemic catarrh, usually called "a bad cold," prevails. Under the same circumstances the mechanic and the artisan find it difficult to prevent the rusting of their iron and steel instruments and tools.

If true, as we believe, and have already intimated, that the affinity resulting in oxidation within the system is, by correlation, changed into vital force, it seems advisable to now give the basis of voluntary effort of both mind and body. The oxygen is stored in the corpuscle in its passive state. While it remains in this condition, the corpuscle can carry it with impunity. It seems almost certain that the effort of will power can change it from the passive to the active state. Thus changed it acts on the tissue it touches, kills it, or at least a portion of its molecules, and this affinity is correlated into vital force which results in voluntary effort. How the will renders it active, and especially how it renders the right portion active, so that the proper molecules are oxidized, is beyond the range of our present knowledge; yet it is only one more illustration of the influence of mind over matter, analogous to the principle that "He spake, and it was done." And after all, we know as well how the will renders oxygen active as how electric sparks accomplish the same end. That is, we know nothing about either.

While the system is in proper health—all the organs and functions normal—the red corpuscles are able to receive and carry a due supply of passive oxygen. And it has been ascertained by careful experiment that the supply intended to originate, or rather liberate force for voluntary effort, of mind or body, is received and stored away during sleep. And this is the principal explanation of why we must sleep. As long as the will can so control the corpuscles that none of the stored oxygen becomes active except in obedience to the will, the individual is, or can be calm and steady. But when, from any cause, such control is not complete, involuntary motions, twitchings, etc., occur. An extreme illustration of this condition is found in *delirium tremens*.

When from exhaustion or other cause the will has lost control of the stored oxygen, if the supply is still abundant, there is great irritability or restlessness, while considerable physical strength remains; but when the supply is nearly exhausted,

extreme debility accompanies the irritability. Various medicines are used for the purpose of restoring this lost control, among them coffee, tea, tobacco, opium, and even alcohol, the latter giving at best but very temporary relief. It is claimed, however, that alcohol gives indirect relief in such cases, by furnishing fuel for the straying oxygen. If this is true, and it seems reasonable, the oxidation of it may result in saving tissue from similar destruction by the merciless element.

By way of condensation of thoughts already expressed in a somewhat scattered arrangement, let us bear in mind that in the formation of tissues and structures of the body, oxygen plays an important part, that it is an essential and an abundant constituent of our bodies, present everywhere, as is claimed by some physiologists, in quantities sufficient to oxidize or burn up all the other elements found in association with it. In the formation of tissues and structures of living bodies, whether animal or vegetable, it exists in combinations which satiate its affinities, and it is therefore quiescent. As long as any tissue is alive and normal, it remains in this condition, and seems to have no disposition to disturb any vital process or structure. Whatever life force or vitality may be, it seems to afford even highly oxidizable materials the ability to resist the action of oxygen, at least in its passive state, as has been already referred to in reference to the phosphorized matter in the red corpuscles. Or, perhaps, it would be more philosophic to speak of vitality being able ordinarily to hold the oxygen to its passive condition. Most, if not all the text-books speak of vitality being one of the circumstances that modify affinity.

And further, in this condensation, let it be remembered that the circulating fluid, the blood is saturated with the same element, much of it passive, yet a portion of it as ozone, while other portions are in combination with carbon, hydrogen, phosphorus, sodium, potassium, etc.

And now, with the condition in life, how, and what in death? With vitality gone, the structures, lately so full of life, are masses of inert matter, subservient to the laws of the inorganic kingdom, and each element, or compound radical, is obliged to look out for itself, amid the many—the almost innumerable affinities awakened by the shock of death. In order to conceive how long it will take oxygen to assert its power over the dead tissues, and to

begin its destructive work of decomposition, think how long it will take an electric spark, after the striking point has been reached, to pass through an atmosphere of oxygen, thereby rendering a portion of it active. In other words, the change is instantaneous, and as no part of the body is free from contact with oxygen, it follows that oxidation must begin as soon as vitality has ceased. No time is lost in the correlation of forces, for though matter may be quiescent, force can not. Think for a moment, about the possibility of gravitation being suspended.

The statement above, in reference to instantaneous action after the cessation of vital force, is not strong enough, for it often occurs that vitality becomes so enfeebled that affinity overpowers it and oxidation takes place before death. Accordingly we often see putrefaction while life is still retained.

This view of the case may suggest the still disputed question as to the precedence of chemical action and micro-organisms, in putrefaction. The oxygen is always there, and ready to act, and can not be prevented from thus acting, but by a change in the laws of affinity, which are laws of the Unchangeable God, and it is difficult to imagine that micro-organic germs can make better time, get their work in earlier, or show more efficient action, however much they may assist in the process as secondary agencies.

Not only is the body built originally, and also continuously nourished in strict obedience to chemical laws; but every morbid change and every diseased action are caused by and conducted in accordance with these same laws. We can not even think till a molecule of the gray matter of the brain has been oxidized as a burnt sacrifice on the altar of life. Not even the great tempter can turn our thoughts into vicious channels except by producing a chemical change in a portion of brain substance.

And on the other hand remedial agents can not arrest disease or restore the ailing body, without producing chemical change of texture and tissue. Some talk of dynamic medicines, or rather medicines which act dynamically; but so far, on soliciting an explanation of the terms used, we have found them simply veils for the concealment of ignorance. But even if we recognize a cure by dynamication, we have only admitted that force, as well as matter may be remedial, which has never been denied;

but force can so act only by causing chemical change; or at least it can not act without producing such change.

Like matter, force is indestructible. One form of it may be changed into another, as light into heat, and that into electricity, and that into mechanical force, etc.; but in these, and similar correlations, nothing is lost. These occurring in connection with matter, however, must always result in chemical changes therein.

Bearing in mind the principle that force can not be inert, but must be active, we can understand some of the phenomena pertaining to chemical changes accompanying, or resulting from death. The elements and compound radicals, no longer controlled by affinity as modified by vitality, are, to an extent, liberated, and each seeks new companionship in obedience to affinity unmodified by vital force. On this principle much of the nitrogen in the system combines with hydrogen, while sulphur, and also phosphorus unite, in large proportions, with the same element. The first of these compounds is alkali, and it further combines with the other two, which are acids, as well as with carbonic acid, which is also liberated abundantly from dead and putrefying bodies. And nothing in Nature is more self-evident than the fact that the force known as affinity, in its control of chemical reagents, is fully able to dispose of, and return to its kindred dust, any organic body deprived of life, without the aid of micro-organisms, maggots, or vultures. Yet it does not follow that it must reject the aid of these agents, in the disposition of the dead; but it does follow that neither germs, "nor any other creature," can be able to exclude chemical action in the process. When we bear in mind that the oxygen stored in the corpuscles is held passive by vital force, and that it is rendered active by death, we must recognize the immediate commencement of oxidation. The free electricity in the overcharged cloud will not likely await the departure of the cattle before striking the isolated tree in the pasture field, nor will affinity wait for the production of germs, and the commencement of their work, before starting active oxygen at its destructive processes. One force is as likely to wait as another.

CHEERING.—*Dentist*, "Well, sir, they talk about coming at the Eleventh Hour; but its a quarter to twelve with all *your* teeth, I'm afraid."

A COMMON SENSE PIVOT TOOTH.

BY DR. L. C. ADAMS, DAYTON, O.

As ALL readers of the dental periodicals know, there are many ways of setting artificial crowns on crownless roots. The writer has tried a number of them, and has had satisfactory success with some, and total failures with others. Whether the failures resulted from defects in the plan, or from inability to properly manipulate, let the reader judge. And right here I wish to call attention to the fact that many roots supposed to be worthless, can be made useful by setting artificial crowns on them.

A case in my practice illustrates the efficiency of the principle: A gentleman called to have the roots of three front teeth extracted, and corresponding teeth inserted on a plate. Seeing that the roots were healthy, I advised him to have crowns set on them, and thus avoid a plate. He consented, and the work was done, and now after a lapse of eight months they are doing good service, and have given full satisfaction. The teeth had been broken off from these roots many years before.

The mode of making and applying the tooth with which I have been most successful, is very simple; and any dentist that can use a blowpipe, and flow hard solder, can adapt it with complete success.

First prepare the root, as for the old method of setting a pivot tooth with the antediluvian wooden peg. Make a hole in the root about a quarter of an inch in depth. A good drill for making the hole may be made by taking a fissure bur drill, three thirty-seconds of an inch in diameter, and grinding to the desired shape. Enlarge the hole slightly at the upper end, then make a tube that will snugly fill the hole without being too tight, leaving the tube projecting a very little. Use platinum, or silver. Then make a plate to fit the prepared root, having the same diameter as the root. Make a hole in the plate to correspond with that in the root, and just large enough to admit the end of the tube. Fit the two nicely together, and fasten with wax, and then remove and invest in sand and plaster, equal parts, and solder the plate and tube together, and also the seam of the tube,

if not previously done, allowing no solder to flow into the tube. After this take a plain plate or rubber tooth, and fit it to the root, seeing that when thus fitted, it properly antagonizes. Grind it back well so as to give free access to the hole in the tube, then back-line the tooth and fit it to the root, with the plate and tube in place, and then fasten as before, and remove and solder together. After this, warm the tooth, and place it on some gutta percha softened by heat, and insert into place on the root, and hold firmly until it has become cool, and then remove and trim off any surplus gutta percha. By using the gutta percha thus, a water tight joint is secured. Dry the root with warm air, and fill the hole in it with well mixed cement, and press the tooth firmly to its place on the root, and with suitable instruments, pack the cement into the tube until it is full. After it has hardened, drill a portion of the cement away, and fill that portion of the tube with amalgam, mixed as dry as it will work; and this completes the process.

This mode of adapting the tooth was first brought to my notice by Dr. C. Bradley, of Dayton, Ohio.

THE USE OF CLASPS.

BY DR. L. P. HASKELL, CHICAGO, ILL.

WHILE there are some who condemn the use of clasps entirely, I must say that there are many cases where they are very useful if not absolutely necessary, and other cases where they are absolutely indispensable if you consult the patient's comfort.

But the clasp must be properly adjusted. Platinum alloy, not too stiff, not too thick, not too wide, nor too narrow. An average width of $\frac{1}{8}$ inch, guage 24.

It should always be adjusted to the *plate in the mouth* with tough wax (such as teeth cards); remove and insert in plaster and pumice just enough to cover clasp and about an inch of surface of plate. It should be soldered at one point, and not more than 3-16 of an inch, so the whole may be as free as possible in its movements. The point of soldering should be, if possible, at the center of lingual side of crown. The plate should extend $\frac{1}{4}$ inch back of the point of soldering where there are no teeth to be put

on it back of clasp. If the clasp can extend only part way around the tooth let it be, if possible, on the posterior side.

The second bicuspid is generally the most desirable, and then the first. Patients must be enjoined to keep them clean. Very few teeth are injured if thus adjusted and kept clean, and infinitely preferable to the enclosing of the entire tooth with a gold band, often unsightly in appearance; the cement with which they are fastened, in many cases disintegrating, and the fluids working in and decaying the tooth; and then in addition the tooth thus fastened to, becoming permanently loosened in the jaw, and last, though not least, a denture, a portion of which becomes absolutely nasty.

Correspondence.

"I charge you that this epistle be read."

GRAND ATTRACTIONS.

EDITOR OF JOURNAL :—The members of the dental profession are invited to the most splendid intellectual entertainment ever offered, at the approaching meeting of the American Dental Association, at Minneapolis.

The interest and benefit of the meetings, the attractions of the trip, and the beauty of the locality, will render it the peer of any former convention. And Minnesota being one of the finest hunting and fishing countries, especially famous for its prairie chicken and grouse shooting, and its fine fishing grounds, holds out to pleasure-loving visitors inducements superior to any other part of the world.

There is endless variety of scenery. When the beautiful and inoffensive birds of one region are slaughtered or frightened away, the doughty hunter can find another field not far distant. If the disciple of Isaac Walton is not satisfied with the cruel work of killing the happy members of the swimming tribes of a fishing ground, he may try another of the ten thousand lakes, more or less, that dot the state, where he can draw out the big brook trout, the black bass, and the mighty muscalonge, enjoying the finest fresh water fishing in the world, happy as Nero fiddling

while Rome burned, until satisfied with the barbarous satisfaction of witnessing the expiring agonies of his innocent victims.

If one chooses to leave the happy feathered and finny denizens of Minnesota undisturbed, he can enjoy the unalloyed pleasure of a trip to the Yellowstone National Park. The railroad fares are unprecedentedly cheap. Come one, come all. Bring your wives along.

ONE OF THE BOYS.

Compilations.

"Gather up the Fragments."

THE POISONOUS EFFECTS OF AMALGAM FILLINGS.

BY THOMAS FLETCHER, F.C.S.

THE paper of Dr. Talbot on this subject* reads like a paper written fifty years ago. If he had taken the trouble to test his own instructions for mixing he would have found that it is impossible to squeeze mercury out of the mixture. What he mistakes for mercury is a solution of some of the metals which should be left in the alloy, the removal of which almost invariably damages the amalgam. He would also have found that it is simply impossible to squeeze the surplus mercury out of any compound amalgam, the quantity of mercury left in being quite double what is necessary to make a good amalgam. The "bond of union," if the mercury is in proper proportion and not in excess, is most certainly strong enough to prevent evaporation at ordinary temperatures. My own experiments with amalgams in the steam pipe of a high pressure steam engine showed conclusively that there was no loss of weight after three months' exposure; on the contrary, every plug showed a trifling increase in weight owing to surface oxidation.

Dr. Talbot evidently puts all amalgams in the same basket, and believes that all amalgams shrink. If he had ever experimented with precipitated silver he would have been more cautious and more correct in his statements, and as to the ques-

* See OHIO STATE JOURNAL OF DENTAL SCIENCE, March, 1885.

tion of porosity of plugs, it is quite possible to make either an amalgam or gold plug porous to any extent, as it is also possible to make either material watertight.

Dr. Austin's idea of lining a cavity with tin to take up surplus mercury is simply a makeshift and risky way of getting rid of what never ought to have been put in the amalgam, and the statement of Haswell quoted that "amalgams expand" is simply a proof that his experiments have been very limited and confined to one or two metals only.

The bulging of a filling which Dr. Talbot apparently takes as a proof of shrinkage, he will find has nothing whatever to do with this. If he will make a plug shaped as a true cube he will find it will slowly bulge on all six sides and the corners will draw inwards, showing a strong tendency to assume a globular form. That the amalgam is apparently hard proves nothing. Ice will flow under pressure and the tendency to assume a globular or spheroidal form after hardening varies with every different alloy.

That mercurial poisoning may occur in some cases where plugs are made with the grossest carelessness and an immense excess of uncombined mercury, may be possible, although I have never once, in twenty years' practice seen such a case. But this, even if it does occur is a proof, not that amalgam *per se* is in fault, but that the dentist does not understand the material he is using. Any dentist who puts in a filling saturated with uncombined mercury had better discontinue using all amalgams until his education becomes more complete.—*Brit. Journal of Dental Science.*

THE RECKLESS SACRIFICE OF TOOTH SUBSTANCE IN DEVITALIZED TEETH.

BY W. N. MORRISON, D.D.S.

[Read before the Southern Dental Association, New Orleans, April, 1885.]

THERE is an operation of great importance that I have never seen discussed before in our societies, or alluded to in the professional literature, that I would like to call attention to. That is the reckless sacrifice of tooth substance in devitalized teeth. By some of the old operators we have been instructed when opening dead teeth to cut freely, and to make the opening large, so we

can see into every part of the cavity, and in many instances drill out the individual root canals, removing solid dentine from the best part of the crown of the tooth, unnecessarily weakening the tooth in the place where it should have the most strength, burring it out to the extent of one-eighth of an inch or more in diameter. In many instances these roots are filled with cotton, and this cavity is filled full of whatever material is used, leaving only a thin, frail shell of dentine between the filling and the enamel. Soon follows the breaking down of these walls, by the ordinary use of the jaw in mastication. I have always felt that there was no excuse for this wholesale destruction of so important a part of the teeth, and have been working in a line to save all the crown substance of dead teeth possible and with the method of root filling which I have used for many years, I find the range of possibilities in this direction very great. Of all materials used or recommended for canal fillings, I have never found anything equal to pure gold wire, of size to correspond to the size of the different canals. The method in which I apply it is described in detail in the *Missouri Dental Journal* for 1874, page 51.

By following out the method described in this article, it will be possible for almost any ordinarily skillful operator to fill the canals of the molars through an opening not to exceed one-sixteenth of an inch in diameter. This opening must be made directly in the center of the crown, with a drill of that size, and then, with a round, or truncated-cone-bur, the sharp angle of the pulp-chamber at the lower end of this hole is slightly funneled, by which access is had with small steel broaches, for the removal of the dead pulp, and the cleansing and treatment, if necessary, of these canals with medicated cotton. And just here I wish to give a word of warning against the over-treatment of canals where the pulp tissue is entirely removed. When I am certain that the root vessels are all removed, and there is no inflammation in the peridental membrane, I fill such canals immediately, often leaving one or two of the other canals for subsequent treatment, where I am not certain the tissue has been removed.

I recently had a case of a lower first molar, with a very large mesial cavity of black decay, which progressed slowly, and was of long standing; a gentleman about forty-five years of age. Being uncertain as to whether the pulp was in a healthy condition enough to live, I gave it the benefit of the doubt, and put in

a large filling. The tooth remained comfortable for several weeks, and finally it began to have neuralgic disturbances on that side, with flashes of pain occasionally, and extreme sensitiveness to thermal changes, both of the air and food, the pain recurring nearly always at night. The gentleman exercised a great deal of patience with it, and was equally anxious with me to keep the pulp alive; but one morning he came to me and said he could endure it no longer. The tooth was quite sore, and I found enough peridental inflammation to warrant me to make an opening into the pulp, which I did through the top of the crown, not removing the good mesial filling, but made a small hole, not exceeding one-sixteenth of an inch. I removed the vessels from one of the roots without much pain. Those of the other root were exceedingly sensitive, and I devitalized them with arsenious acid. In removing the pulp, I discovered quite a nodule of secondary dentine, about the size of quail shot, in the pulp chamber. You will readily appreciate my dilemma. With a small, sharp, barbed broach, I tore all of the pulp tissue from this nodule that would catch on the broach, and pulled it toward the orifice, and as the broach would draw it through, it would disengage itself from this little nodule, which I could feel was perfectly smooth. After I had the vessels all removed from these roots, I rolled the nodule forward over the orifice in the mesial root, and with my gold wire nicely fitted to the distal root, and with a little chloro-percha to fill the interstices between the gold wire and the root walls, I filled the distal root solid and secure to its end. Then with the instrument I rolled this nodule back over the orifice, and filled the mesial root in the same manner.

In all my operations, I endeavor to accommodate the instrument to the case, instead of cutting valuable tooth substance to suit bungling instruments. In lateral incisors, for instance, where a dead pulp is diagnosed, I drill an opening exactly on a line with the pulp canal that will just admit the size of wire that I use for such canals, and no larger.

DISCUSSION.

DR. J. S. KNAPP: While it is undoubtedly true that a large amount of valuable tooth material is sacrificed for the convenience of the operator, the position taken by Dr. Morrison touches the

other extreme. The aperture he describes, through which to remove the contents of root canals and pulp-chamber, was too small for possibility. In the case described, he would not have opened through the sound crown, when there was a filling in the tooth already. Could have reached the nerve canals more readily from that direction.

In all cases, would make more generous opening, for convenience of operating and seeing.

DR. W. H. MORGAN: Had listened with interest to the excellent paper. The general idea of preserving tooth-structure is correct. In proportion as you cut away dead-tooth, you lessen its time of usefulness, because dead-tooth will in time disintegrate. A round opening is more difficult to work through than a slot, however narrow. Considered his next steps radically wrong. The worst condition and the worst time for filling was immediately after removal of contents of dead-tooth. The contents of the tubuli would putrefy, if not disinfected. *Must* use antiseptic treatment before filling, to prevent mephitic gases and periosteal troubles.

DR. J. S. KNAPP: Would ask Dr. Morgan, what is left, after the pulp-tissues have been removed?

DR. MORGAN: The semi-fluid contents of the tubuli, which will putrefy. I cut out the root-canals and pulp chamber freely, and remove all the dentine, in which the contents of the tubuli are liable to decompose. Fill the roots in much the same way as Dr. Morrison, but has screw threads in the wire. Removed a tooth recently in which there was a ball of ox-chlor. beyond the foramen. Was doubtful about extracting, but glad when I saw the condition, though nature might have expelled it. Would not cut away unnecessarily; had no pride in a large filling, as such.

DR. PARMLEY BROWN: Dr. Morrison's paper has waked us up. He is old enough and has had practical success enough to know what he is talking about, but I don't advise every one to try his method. He might succeed, and then again he might not. I disagree with Dr. Morgan as to the use of oxy-chlor. Prefer gutta-percha. Dr. Morrison's paper should be copied into all the journals. Would wager for his success in filling *immediately*. Ten years ago, had a patient from Charleston. Pulp of ten superior anterior teeth had been devitalized six months previous, at her own request, as she told me, to prevent suffering while

being filled. The fillings were all loose; springs of pus exuding. Examined well, and decided to put the dam on and fill them all before she left the chair. "Might as well be killed for a sheep as a lamb!"

Remove all septic matter, and embalm in oil of cloves, and you have a mummy as perfect as one of 6,000 years ago. I removed all the dead pulps, burring only sufficiently to remove the fillings. Filled immediately with gutta-percha, and sent her away with warning of possible swelled face. She had no trouble, and ten years afterwards the gums were as healthy as those of a baby. The atmosphere is sweet after the dead dog is removed! Dr. Morrison is right in working through an aperture as small as he can, and I am right in having it as large as I require. I would not remove a permanent filling, if another opening would suit me as well or better.

DR. W. H. MORGAN: Dr. Brown has misunderstood me. I propose to remove all decomposed matter. He succeeded in his case because all matter had decomposed. The tubuli are in better condition when pulps are just removed to absorb antiseptics when there is an old abscess.

DR. BROWN: Mummies were not decomposed.

DR. MORGAN: No; because antiseptics were not then used. In his case, the pulps and the tubuli had undergone all their decomposition, and one hour's treatment with antiseptics was all that was necessary. But after the removal of fresh pulps, mephitic gases will be formed, and give trouble. They will pass through the foramen, and abscess will form. Abscess follows decomposition. If there is nothing left to decompose, you are safe. If everything is removed, you will have no abscess.

DR. BROWN: Where is the proof that the contents of the tubuli will die?

DR. MORGAN: Take a scrofulous patient. Devitalize and fill immediately. In two months you will be satisfied: Your nose will tell you. There will be decomposition in the dentine.

DR. BROWN: I have never made the test, and never expect to have a chance. I succeeded every time. The filling goes in about $2\frac{1}{2}$ seconds after the nerve comes out. There is no money in treating dead teeth. Dr. Brown said that Dr. C. E. Kells, Jr., had said to him only the day before that he had been educated in the New York Dental College, and was taught to treat roots three

months; had wasted months in that way. Then some one told him that it was useless. He knew it now, and wished he had known it sooner; wished he had never been to New York. There are cases, as when there is an inflamed condition of the periosteum, where it will not answer, but get the channels filled as quickly as possible, every time.

DR. MORGAN: I don't understand Dr. Brown. If he has never had an abscess, he is the only man living that can say as much. If there is an abscess within a year, in five cases out of ten, there will be trouble in time; it may not be in five or in ten years, but it will be in thirty or in fifty years.

DR. BROWN: I did not say I *never* had an abscess. In the case of the lady described, I sent her home, anticipating that very trouble, but it did not follow.

DR. C. W. SPALDING: Both of these gentlemen are right, and both are wrong. It all depends on the individual case. In some cases it will do; in others it will not; as in the teeth of young children, for instance, and those of scrofulous subjects. I endorse Dr. Morrison's views, with some modifications. I also found teeth in exactly the condition described by Dr. Morgan, hundreds and hundreds of times. "Shall we fill immediately?" is the question. As a rule, I remove the soft tissues, treat with antiseptics, if required, and fill immediately. As an antiseptic, I use mercuric bi-chloride, 1 to 1,090, in distilled water. If the water is not pure, the bi-chloride may be decomposed, and thus become nugatory. All local medication, except for purificatory purposes, is unnecessary, and often injurious. If the tooth is not so sore as to give pain on pressure, I proceed with the operation without regard to conditions outside the root. Inflammation of the peridental membrane is due to extension from the pulp, or it proceeds from the effect of irritating gases generated in the pulp-chamber, or canal. If these are rendered pure, and air and fluids of the mouth excluded, you are following nature's methods, and will be successful. Remove irritating causes, and administer proper prophylactics, and abscesses become almost unknown. In medicine I am homœopathic, as some of you know, and the prophylactics are prescribed in accordance with that system.

One word as to Dr. Morrison's method of root-filling. There is only one sure method, or positive operation, by which we can *know* if the filling has gone to the end. If you pump in oxychl.,

or gutta-percha, *you don't know*, and unless the interior of the canal is perfectly dry, you fail to get the chemical conditions necessary to save the teeth. The gold wire is the only positive method. I used it thirty years ago, but not just as Dr. Morrison does to-day. He has improved on the old methods. I think I have tried every method ever known, (except, thank the Lord, that most abominable idea of all—cotton and creosote). I estimate the length of the root, and the depth of the canal, and hammer and file my wire until satisfied that it is a fit. Then I mark the wire, at the open end of the canal, and cut off the exact length. I then pump the canal full of semi-fluid gutta-percha, and *then* introduce my wire up to the point where I *know* it went before. That is to my mind the nearest approximation to positive certainty.

DR. A. W. HARLAN: I was not here to hear the reading of Dr. Morrison's paper, but have listened to the discussion. There are doubtless many young men here who have not had thirty or forty years' experience, but we are willing to be instructed; we are all desirous of doing the best that is possible. There has seemed to me to be a lack of definiteness to the uninformed. Does all this refer to cases where the pulp is to be extracted? When is the pulp to be extracted, after devitalizing? You wish to prevent abscess; you must be governed by well-defined and scientific methods. If the pulp is destroyed to-day, according to the laws governing physiology, changes from a physiological to a pathological condition must follow. When we produce an eschar, will nature remove it to-morrow? Eight days will elapse before tissue destroyed by eschar will be removed. Is it not natural that the same law should apply to destroyed pulp? Remove at once? Remove while wet, or adjust the dam, and prevent mixed fluids from entering? The latter will produce putrefaction. The fluid contents of the tubuli must be removed, and everything hermetically sealed. If it is not filled so thoroughly as to exclude air and water, we will have bad-smelling dentine in every case. With the above precautions, we will not have trouble, even with wrong methods. The necessity for treating is an erroneous idea. All that is necessary is to extract the water. With carbolic acid? No. With creosote? Not at all? What, then? I reply, with absolute alcohol. Alcohol will extract the water perfectly, and will not coagulate. As to the treatment of pulpless teeth, no

gentleman could fill a pulpless tooth for me, at once, if discharging from the canal, and no fistulous opening. We have no right to inflict such suffering; the consequences may be very serious—may result in death. That all septic matter must be removed no one will question. If the canal is filled under the above conditions, the alveolus must be bored before dismissing the patient.

The necessity of treating through the fistulous opening is not obvious. If the pulp-chamber and canals are thoroughly cleaned, and filled immediately, there will be no necessity for treatment. Let some one who has tried treating for months, try this treatment. You will see your success. There is no necessity for wasting tooth-substance to reach the canals. I don't care what you do, if you don't use cotton to fill the roots. Seal the apex—no matter what with—gold wire, lead, gutta-percha, oxychloride. Wire alone cannot possibly make a perfect filling. Have repeatedly extracted teeth with curved roots, not filled to the apex, where wire was used. Must fill with plastics, which will reach the unequal surfaces. The average practitioner is incapable of filling with wire with uniform success; and many do not know how to use plastic materials, either. Oxychloride and oxyphosphate will harden before they get half way to the apex; use gutta-percha—not the little cones which come for that purpose. Never heat gutta-percha in a flame, or in a hot dish; use it cold, and drawn out to its smallest possible compass; sufficiently rigid to go to the apex. I will be happy to show my method.

DR. WILLIAMS, (Ky.): I find good features in plain, common sense. In a room where a small-pox patient has died, the carpet and curtains are not left in position to be disinfected. It is not common sense to disinfect surplus material. Remove all surplus material, and then with simple means the room is easily and thoroughly disinfected. As with the room, so with the tooth. Dr. Spalding spoke of the uselessness of treating two or three weeks. Seal the apex; remove the surplus; disinfect. I use a lead point, like the broken off point of a sharpened pencil. Chip off one-sixteenth of an inch. After washing out the canal, I insert this little point, and thus close the door. I then remove the "carpet and curtains." The tubuli contain more than the canals. In every direction I remove the dentine. In a few days I can thoroughly disinfect. Then use oxychloride or gutta-percha. The door is closed; all is sweet and clean. The whole field is contained in a nut-shell.

DR. RITCHIE, (Texas): Dr. Brown said he has no time to spend in treating teeth. Neither have his patients. The time is not far distant when capping nerves will be left to those who do not attend Associations. We have no right to impose upon our patients; capping nerves is the greatest of all impositions. Beautiful crowns are constructed, but in a little while peridental inflammation sets in; suppuration follows; the fine crown must be removed. The result of capped nerves is dead teeth, discolored teeth, springs of pus, septic matter carried into the stomach, the breath tainted, the health injured, neuralgia.

This patient does not come back to the dentist; he goes to the physician, and there is a big bill to pay. If the physicians only knew it, this neuralgia is due to capped nerves. I am opposed to capping nerves, I strike at the root of the matter in the beginning. I take the nerve out surgically; use local obtunders, use carbolic acid to coagulate the tubuli; keep foreign matter out; fill the nerve canals with cotton and antiseptics to absorb fluids. In a week I fill permanently. For the roots, have tried gutta-percha, but my instruments go through. Liquid plastics go through the foramen, cements clog before they reach the apex, wire projects beyond. I cut away for a clear opening, and use Robinson's material, dissect it and get long and slender fibres, flow the canal with eucalyptus oil, then introduce one thread after another, until the apex is closed. I then disinfect and wash, and complete the filling. Would do away with capping nerves, as unfair to patients and taking our time to do the same work twice over.

DR. WALKER: This discussion affords a fine illustration of the benefit of attending associations. The ground has been traveled over in all directions. Will not detail my methods, but will give one or two points. In using plastics for roots, close the foramen with gold or lead or whatever the particular case may require. Where gold or lead will not reach in your hands, use gutta-percha. Fill with judgment as well as with your other materials. Be guided by the circumstances of each case, but close the foramen thoroughly; filling around a corner with metals is beyond my reach, but gutta-percha will do it. I then take a broach wrapped with cotton to pack the oxy-chloride; the broach will bring away the cotton, but leave the oxy-chloride. As regards devitalization, I am in favor of preserving the nutrient functions. Devitalize when necessary, but save the nerve as long

as possible. Keep a capped nerve under your observation, under a temporary filling for several days. I make the temporary filling of artificial dentine, Hill's stopping, or other form of gutta-percha, or any material easily cut down. If no disturbance ensues within a reasonable period, then cover with permanent filling. This is better than wholesale devitalization, for fear of possible trouble.

DR. J. A. ROBINSON, (Michigan): Much depends on the instrument with which to fill the canal. Take a spring broach, twice the size of a horse-hair, to carry material to the apex; draw the end across your oil stone, and blunt it, and it will not go through your material. The canal must be thoroughly cleaned. The best, the common-sense test, is the odor. For thirty years I have insisted that no tooth should be extracted except with the fingers. I use arsenic occasionally, but cap the nerve whenever my judgment dictates it; we are too timid. When oxy-chloride or oxy-phosphate is to be used, mix with carbolic acid to the consistency of cream, and flow over the cavity; then use it thicker, and press hard. It will cause pain for a few minutes. The harder oxide takes up that mixed with carbolic acid. Try it on glass, and you will see how it is lifted, and the eschar is formed.

DR. CHISHOLM: Have had some experience in capping nerves. I use the old wood creosote, or oil of cloves, with oxy-phosphate. Where the symptoms are favorable, the nerve will live ten or fifteen years. I have a thousand cases that are doing good service. All these different views make the field broader; many valuable ideas have been advanced. Have cured many cases by one treatment. On the other hand, have had cases that required treatment for months, but with ultimate success. In one family of consumptive tendency, it will return every spring. Sometime since, in cutting an apple, I severed the tissues of my thumb. My wife applied spirits of turpentine, and there was no soreness. Just at that time, in excavating a large cavity for a young lady, I cut the nerve. I promptly applied spirits of turpentine, and sealed it up, and it gave no pain. Have since tried it several times, with the same success. This will perhaps remind you of the medical student who, seeing the hospital physician allow pork to a little girl ill of pneumonia, who recovered, wrote in his memorandum-book, "Pork good for pneumonia;" but his first pneumonia patient for whom he prescribed pork, died.

DR. REESE said that the one important thing in filling roots

was to know that no impurities are left. We have a sure test, and that is permanganate of potash. If it does not turn brown in the cavity, there is no impurity. So long as only cold affects a tooth with capped nerve, it is healthy. If heat is painful, there is inflammation—the nerve is dead or dying.

DR. J. H. MCKELLOPS, of St. Louis, said that the opening necessary depended upon the tooth and the patient, in each individual case. In the case of a young patient, with a large cavity running into the cusp, if not well excavated, the tooth will turn black. If the top is left intact, you cannot see what to do. In dead teeth, you have got to cut out well, and see what you do. Spoke of the nodule rolled around in the cavity, and finally impacted in the filling (as described by Dr. Morrison). Said that such a substance was diseased matter, and should be removed; that neuralgia in apparently sound teeth arose from calcified pulps. Asked Dr. Morrison why he left that foreign substance in the cavity; had never heard of such a thing before. Would treat through the process, and be successful, but if the canal was filled with a blind abscess, trouble was inevitable. Cited several very stubborn cases—final success. One case, a young lady with abscess over superior central and lateral incisor. Had been treated by a New York dentist, who made a specialty of alveolar abscess; had been going on four years—lady in poor health, wasting away. Diagnosed filling projecting through the apex, with necrosed bone to the base of the nose. Removed fillings of gutta-percha and cotton from the root; opened up the side of the teeth. There was no remedy but to remove the teeth. Treated every three or four days, for five or six days. (Exhibited the teeth). My friend from New York does not practice what he preaches. I would not dare to cut out as he does, but I cut enough to see what I am doing. As to filling roots with gold, every one knows what I think. I have preached till I am ashamed to say any more. Dr. Clark, of New York, taught me his method. There are cases where gold cannot be got in; you must have something that you can force up—that is, gutta-percha. No matter how skilled a man may be, he can't fill a blind cavity with gold; but you can inject gutta-percha, and drive it up, and do no harm, where gold would go through, and cause excruciating pain.

Dr. McKellops then described a recent case, where the cheek was swollen, and feeling like dough, the abscess approaching an outside opening. Extracted the tooth, with the abscess intact; a round ball on the apex; the root had been filled with gold, which passed through the apex, with an amalgam crown. To handle gutta-percha for root filling, imbed a stiff broach in unslaked lime, and heat it red hot, making it so soft as to require careful handling. With this you can force gutta-percha where you cannot get gold. (Exhibited another tooth with cotton forced through the apex). If a man takes pains, he can't be in a hurry—he can't do first-class work in a hurry; he makes himself hard work in the future. Dr. Shepard uses waxed tape to separate—say the bicuspid; takes a week, and has no soreness. You can get plenty of room to see what you are doing. I don't pretend to succeed in all operations; I fail, and others fail. We don't always know of our failures; they are tired of us, and don't come back.

(Question). Will not the chloroform evaporate and cause shrinkage of the mass in the canals?

Dr. McKellops: The evaporation takes place during manipulation, before it goes into the tooth.

Dr. C. W. Spalding: I do not propose to offer arguments against the practice of others. I don't presume a man would advocate a measure if he had not been successful with it; but no one has claimed to fill root canals with gold only, and have the work perfect. No such claim has been made in the papers read, nor in the discussions.

Dr. McKellops: Did you not say, "Close the apex with gold?"

Dr. Spalding: It does not much matter what material is used, provided you reach the apex; but nobody advocates filling canals with gold wire only, leaving interstices. We use plastics, as a solution of gutta-percha, but at the same time, to make sure that the apex is closed, we take the measure of the depth of the canal, and cut off the right length. Then having filled the canal with the plastic material, insert the gold wire in the plastic mass, and you drive it into all the interstices, and seal the apex. Much has been said against the process, but it gives the nearest approximation to absolute certainty.

Dr. Taft: Most of the remarks made in the discussion seem

to be based on the supposition that dentine is uniform. Must note whether the tooth is living or devitalized; whether a tooth is young or matured. Difficult to treat devitalized teeth in young persons—contain more organic matter. If, as Dr. Morgan says, there is decomposition in the tubuli, it must be much worse in young teeth, and there is greater danger of periosteal irritation, from emanations passing through this less dense dentine. All these conditions should be recognized and considered. Some adult teeth, also, are less dense than others; some are very soft. This depends on various causes. If the tooth is firm and dense, we can devitalize and fill immediately; we can perform operations that would not be tolerated at all in soft teeth. There are some teeth with which we can do anything we like; others that are difficult to save; others with which success is impossible. The contents of the tubuli do not always undergo prompt decomposition. The evaporation of water from the tissues produces great modification. Different constitutions act differently under irritants. Some take up poisons and eliminate them without disturbance. In others, the mildest irritants will produce violent disturbance. We must discriminate between youth, middle age, and old age; between health and debility; be guided by conditions. We must study the histological character of each tooth. The electrical light is an invaluable aid in distinguishing characteristics of tooth adjuncts. The condition of the dentine also modifies the amount of cutting away; dense teeth have solid walls; in soft teeth, remove as little as possible. As Dr. Morgan said, in dead teeth there is a retrograde metamorphosis.

DR. MORGAN: I take exception to the position of Dr. Harlan regarding removal of watery portions of contents of tubuli. It will be renewed by the periosteum. In proportion as you apply antiseptics and prevent decomposition, you prevent discoloration. So much for the organic matter. I will tell you how you can fill a root and *know* the apex is sealed. If you drill all the way through with a cone-shaped burr, you have a cone-shaped opening; your burr is the model for your filling. Take a cylinder cone of gold, carry it up, and drive it home hard and tight, and you have it sealed. You can't plug a crooked root with gold, and know the result. With the first soreness of periosteum, by watching closely, you can prevent an abscess by applying aqua ammonia as a counter-irritant, and putting the

system in a condition to resist inflammation. When an abscess has been treated, the bony tissues are broken down, and there is an abnormal filling up of abnormal connective tissue. When the cause of irritation is removed, nature strives to renovate; the absorbents become active; new tissue is formed, but it is not the original tissue: it is eschar tissue.

DR. J. J. R. PATRICK, (Illinois): Roots have all shapes; they are straight or curved, club shaped or twisted; but, as a rule, the internal wall follows the external outline, but you cannot be positive even of this. When roots are filled with wire, it is liable to perforate the apex. I have seen a tooth with gold wire projecting one-half inch beyond the foramen. It is true it had been worn for years without trouble. With regard to fistulas, I have found the treatment easy in the lower teeth; by the law of gravitation, they drain naturally through the fistulous opening. But it is different with the upper teeth; they drain through the canal, and if you risk filling at once, you have to rely upon absorption.

DR. WM. N. MORRISON, (St. Louis): The discussion has been too long already, but I wish to reply to one or two points. First, as to what Dr. Patrick says about wire passing through the apex, I doubt if he will ever find a second projecting half an inch. If the wire goes too far on trial, it is very easy to substitute a larger size, until you find one that does not pass. I will gladly illustrate my method in a clinic on next Friday. Select your most difficult cases—either live teeth or dry teeth. If dry, invest them in plaster, so that I cannot know the shape of the roots. I would prefer teeth in the mouth. If in plaster, I will ask you to break them open, and judge of the work in the canals. I will be glad to put it to this test. [Applause].—*Southern Dental Journal*.

Editor's Specials.

"Write the Vision and make it plain."

PYORRHŒA ALVEOLARIS.

THAT is a big name; but the thing named is still bigger. Pins, according to the boy's essay, have saved hundreds of lives,

by people not swallowing them. In like manner, teeth have saved many lives by not being lost at early periods in life. The big disease named above occasions the loss of more teeth, at and after middle life, than most, if not all other causes. Hence, the importance of it can scarcely be over estimated.

We are glad to see the subject of pyorrhœa receiving an unusual amount of attention in the societies and the journals. Its persistent and almost continuous consideration suggests hobby-riding. But what of it? Let it suggest. Real progress is seldom made by any but that style of riding. One man mounts a hobby and rides it to the point of exhaustion, and then mounts another and pushes on, if he is at all a progressive man. A rival rider mounts another hobby and gives chase; and when his charger falls exhausted, he finds that of his competitor now rested, and waiting for duty. Of course he mounts him and renews the pursuit. Thus the entire pathway of the hill of science is bestudded with the hobbies already mounted, or waiting to be mounted. And we are quite contented to see the one under consideration almost constantly in harness.

In the status of this disease in our profession we have an illustration of the fact that a man is granted all that he claims, if only earnest and persistent in his claim.

It is claimed by some, and perhaps by those most noted in its treatment, that the disease is entirely local. At least some of them suggest only local treatment, and claim uniform cures. But is it not almost certain that such simply remove local irritants, and Nature effects the cure? This is likely to occur in good constitutions; but it would be as reasonable to regard mumps and mercurial ptyalism as local diseases.

When the disease is in the constitution, and about ripe for manifestation, almost any local irritant will result in its speedy development. And ordinarily each, and all local irritants must be removed to effect a cure. A deposit of salivary calculus often seems to invite its local manifestation. But this calculus is not deposited while the buccal fluids contain their normal quantity of free carbonic acid; for by the aid of this agent they are able to hold the lime-salts in solution. If there is a lack of this acid in the saliva as it emerges from the ducts, the fluids ordinarily saturate themselves by taking it direct from the atmosphere. But if from any cause an alkali, or alkaline carbonate, is held in the

saliva, the carbonic acid is taken into combination, and the lime-salts are precipitated.

But, as the alkali that does the mischief is nearly always ammonia, its presence is both a sign and an evidence of debility and constitutional degeneration, a sign of that state that precedes and invites pyorrhœa. To the extent that ammonia is found in the fluids of the mouth, and elsewhere beyond its normal haunts, death has taken place. Indeed it is well known that alkali causes, in part, the death odor of putrefying bodies.

But in a constitution in a state of ammoniacal degeneration, and afflicted by pyorrhœa, does it seem like a reasonable course to rely on local treatment alone for a cure? We have already alluded to the fact that a man is granted, by popular estimation, all that he claims, if only he claims boldly and persistently. Accordingly, we find a man, who, as far as we can find out, relies on local treatment alone, for this disease, claiming to be the originator of the only efficient treatment for it. Or, as he told the writer in 1866, "You and the rest know nothing about it. I understand and cure it." These were the words as we remembered and noted them down about a minute after they were uttered. Still we thought that this was, like most other diseases, amenable to treatment in favorable cases, while, in extreme cases, it held the patients the few remaining days of life. Our early experience taught us something about it, as at the age of nineteen, after more than a year of constant prostration from a complication and series of diseases, the mouth was attacked by well defined pyorrhœa, which was cured by the careful and repeated removal of local irritants, local depletions, the local use of maple sugar as a disinfectant and antiseptic, tri-daily frictions of the gums with the finger, with firm pressure, and the internal use of elixir vitriol, lactic acid, etc. The loosened teeth became solid in place, but the gums never again covered all the portions denuded by the disease. This treatment was adopted on the advice of an older brother, who at the time was the managing member of the family.

After beginning the practice of medicine, many cases of this disease were seen and treated, as the nearest dentist was over twenty miles distant. The disease was found as amenable to treatment as chronic ague, but local measures were never trusted alone. To the writer and other physicians, the disease was famil-

iar before we had any thoughts of embarking in dental surgery ; but since the general recognition of dentistry, the disease is somewhat, if not generally given over to the care of dentists. And why the complaint should be named after any one man is not clear. We never heard tuberculosis called Lawson's disease, even though Dr. L. gave it more than ordinary attention, and died from it.

Though pyorrhœa is an old disease,—older than Dr. Riggs, or any other doctor now living, a wonderful diversity of opinion still exists in reference to it. This can be illustrated, as well as demonstrated, if any are incredulous, by brief quotations. At a late meeting of the Southern Dental Association, a member is reported as saying: "Pyorrhœa is rather a symptom than a disease, *sui generis*. He considers that it has its inception in alcoholic stimulants, which increase the amount of uric acid eliminated. He has had the calculi analyzed, and found them to be almost pure uric acid. The deposits occur farthest from the direct influence of the heart's action, and in parts of low vitality. It is confined to males, or if existent in woman, it is not until after puberty. The remedies required are those which decrease the elimination of uric acid, as atropine, digitalis, acetate of potash, cod liver oil, etc. Negroes never are attacked by it."

On the other hand Dr. Morgan, probably Prof. W. H. Morgan, of Nashville, is reported to have said as follows: "According to my experience, negroes have it as frequently as white men, and females of all ages as often as men. I have, at the same time, treated a mother with a suckling babe, and her daughter fifteen years old. I know that for three generations no alcohol had been used in that family, yet pyorrhœa had existed from grandfather down. It is highly commendable to analyze the deposits, and I am glad to learn of such investigations, but I have never before heard the disease attributed to uric acid. The general health is often broken down, and constitutional treatment is required. It is often confounded with scurvy, and indeed there are some points of resemblance."

A greater diversity of opinion can scarcely be imagined, yet each seems to treat the sentiments of the other with all due respect, and we shall, as usual, try to follow the good example set. We may sometimes appear as dogmatic in the statement of our own opinions, yet we claim for them nothing more than their

current value. But if we did not believe them, of course they would not be our opinions; and if sound, as we must therefore believe, they are entitled to an emphatic statement in setting them forth. And when we differ in sentiment with any one, we are free to criticise his opinions, if they have been published, but not the man. Accordingly, after we have given public expression, the thing expressed is no longer ours, but is at the mercy of the public, and no criticism has ever given us offense, nor has it caused even impatience or disquiet. This digression is made because some have referred to our criticisms as if discussing the author instead of his expressed sentiments.

As to the first quotation above, we have seen many negroes suffering from the disease in question, one at least a native of Africa. We have found the disease as common with the one sex as with the other; and once a school girl was put into our care who had lost her teeth by pyorrhoea before reaching puberty. It is doubtful if the speaker is fairly reported in saying that "the deposits occur farthest from the direct influence of the heart's action," as they are seldom found at the tips of the toe nails. We never before heard of the uric acid theory, though we think we have found traces of this acid in the deposits. Does it cause the disease by being eliminated, or by not being thus disposed of with sufficient promptness? We hardly catch the speaker's idea here. This may be owing to bad reporting, but is more likely due to our own obtuseness. The alcohol theory of its inception will not carry out.

At the same meeting Prof. Taft said a good deal in a few words, thus: "Systemic conditions cause the disease and are caused by it. Local treatment is of no avail until the general conditions are rectified and the system toned up." Long ago we tried to teach him nearly the sentiment of the last expression, only we had it that local treatment is of *but little avail*, etc.; and that is what he probably was aiming to say now, for he always gave great attention to our teaching, especially when, as in this case and generally, we taught him what he already knew. That made our teaching less laborious; and as we were a few months older, much larger, and far more impudent than he, we always found him a respectful pupil. At all events, local treatment can do some good, even in the worst cases, without general treatment, but the latter should never be neglected.

A warm advocate of local treatment is found in Dr. J. A. Robinson, ("Uncle Jerry") of Michigan. He removes local irritants and applies the "Robinson Remedy" once or twice, but never three times, he tells us, as a cure is always obtained without a third application. Many have spoken well of this remedy, publicly and privately, but many who do not know Dr. R. will regard his statements as too highly eulogistic, and will regard him as enthused, like the young mother who has the "pootsie-tootsiest" and most kissable baby in the county. But we ask for this compound an honest fair trial. We do not believe in specifics, however, unless chemical antidotes are to be so considered.

An important item in the treatment of this disease, which we seldom see referred to in society transactions, is firm friction of the spongy gums with the fingers. Firm pressure thus persistently made, presses the stagnant blood out of the capillary vessels, and the same blood does not return into them, but a fresh supply takes its place, thus improving the nutrition of the parts. We have always found this a very efficient aid in the treatment of this disease, and in treating the gums when congested or engorged from any cause.

The reader will readily see that this is not intended as a discussion of either the etiology, pathology or treatment of the disease. If by a little gossip, careless writing, we can cause increased attention to the disease, the object of this will be gained.

THE AM. DENTAL ASSOCIATION AT MINNEAPOLIS.

THOUGH without hope of ability to attend it, we look forward to this meeting with interest. However much it may be criticised, it is the representative association of our profession that is to hold the meeting. All our progressive dentists should be present unless, like ourselves, absolutely prevented by disability. Nothing else taxes our life forces so much as riding in the cars. When a few years ago the Association agreed to meet at Cincinnati, we felt as if the arrangement was made for our special accommodation, and were thankful accordingly. We can hardly hope for another such favor, however much it would delight us. Should it meet again at Cincinnati, or at Detroit, Indianapolis or Toledo, we would probably, if as at present, attempt to enjoy its

deliberations, and thus see the faces of many friends. But as it requires a fortnight to recover from a ride to Columbus or Cincinnati, it might be more profitable to stay at home. It is much against our inclination to speak or even think of these things, but we receive so many kind letters urging us to be present at meetings hundreds of miles distant, that we feel such explanation due to our soliciting friends. This will reply to very many letters in reference to this meeting above.

To one nursing his feebleness at home, the official notice of the Executive Committee suggests the fencing in of more land than can be well cultivated; but we must not forget that this is the age of steam and electricity, nor that will-power is the master force known in Nature. If the members of the Association *will* to go to the Park they *will* go. And as to the "guns and fishing tackle," it is not "our put-in;" but it is well known to our friends that we have always advocated attendance on the Association for its own sake, and that we still believe that the less side issues and outside pleasures are thought of the better it is for the Association and for science. We can hunt and fish at home, many of us, and all of us without the aid of our fellow dentists. Laymen, or men of any class, can aid us in fishing or hunting; but dentists are the *elect*, and when we get a number of them together, we are so anxious to learn what they know and can tell, that we begrudge the time wasted on anything else. We may be charged with envy and moroseness in holding and uttering these sentiments; and some may think that as we cannot enjoy such scenes, we are not willing to have others happy in doing so. But we expressed similar thoughts when among the strongest men in the profession, and always regretted the suggesting of side issues. Till they are left out, the Association will not fulfill its mission, and the attention they have received all along is the rational explanation of the lack of progress in the Association. For though it may have better meetings than it had in the first six years of its existence, it has not kept pace with the progress of the profession.

We are not sure that the adoption of Sections, in place of the Standing Committees, was a profitable change, but we presume no one will claim that the Sections have done full duty. For example, at the last meeting we were able to attend, but one Section was ready to report when called, and its report was deci-

ded to be entirely off its subject by an overwhelming vote of the Association. Perhaps the Standing Committees displayed a like unreadiness. We do not recollect now, but if they did the Association, all the years, has been wounded in the house of its friends.

Much of the general unreadiness and lack of interest manifested have been due, in part, to the amusements and side scenes. Some will argue that the members need these as a source of rest; but the most diligent attention to scientific work and thought is such a decided change from the daily doings of the members, that it can not be fatiguing, in such a brief period, but must refresh.

We hope the Minneapolis meeting will be better than any preceding it. We love the Association, and hope that it will arise in its might and assert its gigantic powers and energies, which, to a great extent, have been lying inert. A revival of effort on the part of individual members will revive the Association; and when properly revived it will accomplish more in a single meeting than in all the past years of its existence. Any spectator, professional or otherwise, at any meeting that we ever attended, could not fail to know that very much of the work done, was accomplished without previous study. To do much good, the scientific work must be done before the meeting; and as soon as one meeting terminates, preparation for the next should begin.

How we should delight to be at Minneapolis! "To will is present with me; but, how to perform that which is good I find not."

"MONSIEUR TONSON'S COME AGAIN."

"BACKWARD, turn backward, O Time, in thy flight," was the silly song-prayer of the poet, but we did not expect the puerile petition to be so promptly answered by the old fellow of the hour-glass. But it seems that he has hung up his old scythe in a fence corner, set his glass on a stump, and reversed his boots.

In proof, let us state that in our early boyhood the newspapers told of a man who extracted teeth with his fingers, after using a jack-knife to cut the *ligamentum dentis*. Now the papers tell us, "It is with the thumb and index finger that the Japanese artist delicately withdraws you a molar or two." And

as good lying always descends to minutiae, this story is finished out and ornamented by a carefully worded statement as to how these wonderful dentists acquire such skill. "For a long time he has to exercise himself in extracting bits of wood inserted in planks, loosely at first, but afterwards solidly fixed by hammer strokes in oak wood."

Of course the writer is telling the truth, describing things as he saw them, or how could he be so minute? "Bits of wood," not blocks. "In planks," too, not in logs. "Fixed by *hammer* strokes," not by mallet blows. "In oak wood," too you see. Ash would not answer, (for the lie.)

The minuteness of the lying convinced the readers that the story was literally true, like "Gulliver's Travels," and, accordingly, it got from the newspapers to the literary journals, and from these to the medical, which are entitled by men so wondrous wise that they cannot recognize dentists as other than mere mechanics, while they are *professional men*. Yea, verily! and what a profession, if these editorial dupes were its representatives!

Many of their predecessors believed in the *ligamentum dentis* man, and these have "gone on toward perfection," till they can believe something far sillier. Of course the newspaper reporter that started the lie, in the absence of news items, looks on and enjoys his success in playing on human credulity. But for a medical journal to believe such stuff!

"ABSURD?"

DEAR SIR, do not say it about anything claimed, present or prospective. May be you didn't say it. Perhaps the reporter failed to take you correctly; and this seems all the more probable, as a following sentence modifies the charge of absurdity, by having you say, "Perhaps it is not impossible, but it is at least doubtful."

At the late meeting of the Southern Dental Association, a speaker is reported as saying, "Dr. Atkinson claims that lost alveoli can be reproduced, but this is absurd."

Undoubtedly lost alveoli have been reproduced in favorable cases. When the cementum retains its vitality and has a clean

surface, bony material may be, and has been deposited, extending from the remaining borders of the sockets, the new periosteum adhering to the cementum, while sockets almost new are formed; and loosened teeth are made to stand firmly in place. This often happens if judicious care is given while the gums are still left to cover the necks of the teeth denuded of bone. The "pockets" must be thoroughly cleansed, and disinfected if necessary; and a clean clot from healthy blood is a good protector while the process is going on.

But this is written mainly to protest against calling things absurd in these days of progress. The steamship, the telegraph, the telephone, the railroad, the electric light, and hundreds of things now in daily use were, not long ago, regarded as absurd. The conquest of absurdities is the measure of progress in the arts.

When men are trying to accomplish that which, by the masses, is regarded as absurd, something is likely to be gained. When George Stephenson was trying to get an appropriation for an experimental railroad, a Scotch lord said, "But, if ye were ganging wi' yere iron wagon on yere iron track, at the great speed o' eight or nine miles an hour, an' a coo gets before ye." "Bad for the coo," was the reply. The whole thing was absurd to the Scotchman.

EXPLANATION.

THE editorial article in a preceding number, on the necessity of using the teeth, and other organs, as a means of preserving their vitality, was written expressly for the *JOURNAL*; but as the printers did not need it for a few days, it was decided to read it at the meeting of the Mad River Society; and as the time had come for us to read a paper before the Xenia Academy of Medicine the evening before the Mad River meeting, rather than fail, we "mustered in" the same little paper, thus making it do triple duty. When younger and stronger we didn't take things along so easily, but got up a new paper for every occasion.

In this connection it may be well to say that the paper in the present number, on Chemistry in Life and in Death, though written expressly for the *JOURNAL*, was read at a meeting of the Xenia Academy, and again we are released from the irksome duty of preparing a special paper for the occasion.

If our readers know how well we thus economize time and strength, they may have brighter hopes of our holding out in duty on the JOURNAL. On the other hand, this may discourage those who are hoping to soon see us laid aside, to make room for a better man in the editorial chair. But be it as it may, "facts belong to the public," and a narration of them need shame no one.

WEDGED FLASKS.

THE following paragraph was intended for Dr. Berry's paper, read at the late meeting of the Mad River Valley Society, on "Dental Economics," but the thought was overlooked. We are glad to give it here, hoping it will attract quite as much attention as if it had appeared elsewhere. We are not here advertising appliances, but we regard it as quite legitimate to give the opinions of practical men on anything offered for the use of our profession. Attention to little things gives success to any calling.

OMISSION.

IN the hastily written article on "DENTAL ECONOMICS," for the late meeting of the Mad River Dental Society, from oversight, a few words were omitted as to economy of time in the use of a flask, for working rubber, secured by two wedges, instead of bolts and nuts.

It requires but a moment to put the wedges in place, fasten, or remove them; and they are more cleanly in using than bolts.

A. B.

MATRIMONIO-DENTAL.

AMONG the matrimonial news items of interest to the readers of the JOURNAL we have two on hand: On the 16th of June Dr. J. E. Crozier, Dentist of Lee's Summit, Mo., and Miss Nettie Baxter, of Vevay, Indiana, were married at the residence of the parents of the bride, who is a daughter of our friend of the olden time Dr. J. W. Baxter, formerly of Warsaw, Ky., but now of Vevay, Indiana.

Long life and happiness to the new firm expresses the wishes of the JOURNAL.

The second item is like unto the first: On the 25th of June, Miss Etta Humphreys, D. D. S., Demonstrator of Clinical Dentistry in the Dental College of the University of Michigan, was married to Mr. Elmer E. Paine, City Editor of the *Xenia Torch-light*, and the only son of our friend and neighbor Dr. George L. Paine, of Xenia, Ohio.

As the bride is an eminent dentist and the bridegroom a promising literary man, we ought, at least, to have a revival of dental literature. The JOURNAL is joyful over the joyous event.

Societies.

"Wherewith one may edify another."

MEETINGS OF SOCIETIES.

MINNESOTA Dental Association, Minneapolis, July 31, Aug. 1 and 3.

AMERICAN Dental Association, Minneapolis, Minn., August 4.

MISSISSIPPI Dental Association, Jackson, Miss., August 4, 5, 6.

NORTHWESTERN Dental Association, Fargo, Dakota, Aug. 7, 8.

VIRGINIA State Dental Society, Charlottesville, August 19.

EAST TENNESSEE Dental Association, Sweetwater, Tenn., August 25.

CENTRAL ILLINOIS Dental Society, Bloomington, Ill., October 13, 14, 15.

OHIO STATE Dental Society, Chillicothe, O., Oct. 28, 29, 30.

MINNESOTA DENTAL LAW.

AN ACT To insure the better education of practitioners of Dental Surgery and to regulate the practice of Dentistry in the State of Minnesota.

Be it enacted by the Legislature of the State of Minnesota:

SECTION 1. That it shall be unlawful for any one to engage in the practice of dentistry in this State unless he or she shall have obtained a certificate, as hereinafter provided.

SEC. 2. A board of examiners, to consist of five practicing dentists, is

hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this act. The members of said board shall be appointed by the Governor, who shall select them from ten candidates, whose names shall be furnished him by the State Dental Association. The term for which the members of said board shall hold their offices shall be five years, except that the members of the board first to be appointed under this act shall hold their offices for the term of one, two, three, four and five years respectively, and until their successors shall be duly appointed. In case a vacancy occurring in said board, such vacancy shall be filled by the Governor from names presented to him by the Minnesota State Dental Association. It shall be the duty of said Minnesota State Dental Society to present twice the number of names to the Governor of those to be appointed.

SEC. 3. Said board shall choose one of its members president, and one the secretary thereof, and it shall meet at least once in each year, and as much oftener, and at such times and places, as it may deem necessary. A majority of said board shall at all times constitute a quorum, and the proceedings thereof shall at all reasonable times be open to public inspection.

SEC. 4. Within six months from the time this act takes effect, it shall be the duty of every person who is at that time engaged in the practice of dentistry in this State to cause his or her name and residence, or place of business to be registered with said board of examiners, who shall keep a book for that purpose. The statement of every such person shall be verified under oath, before a notary public or justice of the peace, in such manner as may be prescribed by the board of examiners. Every person who shall so register with said board, as a practitioner of dentistry, may continue to practice the same as such, without incurring any of the liabilities or penalties provided in this act, and shall pay to the board of examiners for such registration a fee of one dollar.

It shall be the duty of the board of examiners to forward to the Clerk of the Court of each county in the State a certified list of the names of all persons residing in his county who have registered in accordance with the provisions of this act; and it shall be the duty of all clerks to register such names in a book to be kept for that purpose.

SEC. 5. Any and all persons who shall so desire may appear before said board at any of its regular meetings, and be examined with reference to their knowledge and skill in dental surgery; and if the examination of any such person or persons shall prove satisfactory to said board, the board of examiners shall issue to such persons, as they shall find to possess the requisite qualifications, a certificate to that effect, in accordance with the provisions of this act; said board shall also indorse as satisfactory diplomas from any reputable dental college, when satisfied with the character of such institution, upon the holder of such diploma furnishing evidence, satisfactory to the board, of his or her right to the same.

All certificates issued by said board shall be signed by its officers, and such certificate shall be *prima facie* evidence of the right of the holder to practice dentistry in the State of Minnesota.

SEC. 6. Any person who shall violate any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction may be fined

not less than fifty dollars nor more than two hundred dollars, or be confined six months in the county jail. All fines received under this act shall be paid into the common school fund of the county in which such conviction takes place.

SEC. 7. In order to provide the means for carrying out and maintaining the provisions of this act, the said board of examiners may charge each person applying to or appearing before them for examination for a certificate of qualification, a fee of ten dollars, which fee shall in no case be returned; and out of the funds coming into the possession of the board, from the fees so charged, the members of said board may receive, as compensation, the sum of five dollars for each day actually engaged in the duties of their office, and all legitimate and necessary expenses incurred in attending the meetings of said board; said expenses shall be paid from the fees and penalties received by the board under the provisions of this act, and no part of the salary or other expenses of the board shall ever be paid out of the State treasury. All moneys received in excess of said per diem allowance and other expenses, as above provided for, shall be held by the secretary of said board as a special fund for meeting expenses of said board and carrying out the provisions of this act, he giving such bond as the board shall from time to time direct. And said board shall make an annual report of its proceedings to the Governor by the 15th of December, of each year, together with an account of all moneys received and disbursed by them pursuant to this act.

SEC. 8. Any person who shall receive a certificate of qualification from said board shall cause his or her certificate to be registered with the Clerk of Court of any county or counties of which such person may desire to engage in the practice of dentistry, and the Clerks of the Court of the several counties in this State shall charge for registering such certificates a fee of twenty-five cents for such registration. Any failure, neglect or refusal on the part of any person holding such certificate to register the same with the Clerk of Court, as above directed, for a period of six months, shall work a forfeiture of the certificate, and no certificate when once forfeited shall be restored, except upon the payment to said board of examiners of the sum of twenty-five dollars as a penalty for such neglect, failure or refusal.

SEC. 9. Any person who shall knowingly and falsely claim or pretend to have or hold a certificate of license, diploma or degree granted by any society, or who shall falsely and with intent to deceive the public, claim or pretend to be a graduate from any incorporated dental college, not being such graduate, shall be deemed guilty of a misdemeanor, and shall be liable to the same penalty as provided in section 6 of this act.

SEC. 10. This act shall take effect and be in force from and after its passage.

Approved March 3d, 1885.

TAKE NOTICE!—The days of eloquent orations, full of flowing rhetoric, have passed. The man who is full of information, and has the capacity to communicate it in the fewest possible words, is now the man who carries the most weight. This remark applies also to writers.—*Cin. Com. Gaz.*

CALIFORNIA DENTAL LAW.

[*Approved March 12, 1885.*]

SECTION 1. It shall be unlawful for any person who is not at the time of the passage of this Act engaged in the practice of dentistry in this State to commence such practice, unless he or she shall have obtained a certificate as hereinafter provided.

SEC. 2. A Board of Examiners, to consist of seven practicing dentists, is hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this Act. The members of said Board shall be appointed by the Governor from the dental profession of the State at large. The term for which the members of said Board shall hold their offices shall be four years, except that two of the members of the Board, first to be appointed under this Act, shall hold their office for the term of one year, two for the term of two years, two for the term of three years, and one for the term of four years, respectively, and until their successors shall be duly appointed and qualified. In case of a vacancy occurring in said Board, such vacancy shall be filled by the Governor in conformity with this section.

SEC. 3. Said Board shall choose one of its members President, and one the Secretary thereof, and it shall meet at least once in each year, and as much oftener and at such times and places as it may deem necessary. A majority of said Board, shall at all times constitute a quorum, and the proceedings thereof shall, at all reasonable times be open to public inspection.

SEC. 4. Within six months from the time that this Act takes effect, it shall be the duty of every person who is now engaged in the practice of dentistry in this State, to cause his or her name and residence or place of business to be registered with said Board of Examiners, who shall keep a book for that purpose. The statement of every such person shall be verified under oath before a Notary Public or Justice of the Peace in such manner as may be prescribed by the Board of Examiners. Every person who shall so register with said Board as a practitioner of dentistry shall receive a certificate to that effect, and may continue to practice as such without incurring any of the liabilities or penalties provided in this Act, and shall pay to the Board of Examiners for such registration the sum of one dollar. It shall be the duty of the Board of Examiners to forward to the County Clerk of each county in the State, a certified list of all persons residing in his county who have registered in accordance with the provisions of this Act, and it shall be the duty of all County Clerks to register such names in a book, to be kept for that purpose.

SEC. 5. Any and all persons, who shall so desire, may appear before said Board at any of its regular meetings and be examined with reference to their knowledge and skill in dental surgery, and if the examination of any such person or persons shall prove satisfactory to said Board, the Board of Examiners shall issue to such persons as they shall find to possess the requisite qualifications a certificate to that effect, in accordance with the provisions of

this Act. Said Board shall also indorse as satisfactory diplomas from any reputable dental college, when satisfied of the character of such institution, upon the holder furnishing evidence satisfactory to the Board of his or her right to the same, and shall issue certificates to that effect within ten days thereafter. All certificates issued by said Board, shall be signed by its officers, and such certificates shall be *prima facie* evidence of the right of the holder to practice dentistry in the State of California.

SEC. 6. Any person who shall violate any of the provisions of this Act, shall be deemed guilty of a misdemeanor, and, upon conviction, may be fined not less than fifty dollars nor more than two hundred dollars, or confined in the county jail for each and every offense. All fines recovered under this Act shall be paid into the Common School Fund of the county in which said conviction takes place.

SEC. 7. In order to provide the means for carrying out and maintaining the provisions of this Act, the said Board of Examiners shall charge each person applying to or appearing before them for examination for a certificate of qualifications, a fee of ten dollars. which fee shall in no case be returned, and out of the funds coming into the possession of the Board from the fees so charged, and penalties received under the provisions of this Act, all legitimate and necessary expenses incurred in attending the meetings of said Board shall be paid. And no part of the expenses of the Board shall ever be paid out of the State Treasury. All moneys received in excess of expense, above provided for, shall be held by the Secretary of said Board as a special fund for meeting the expenses of said Board, and carrying out the provisions of this Act, he giving such bonds as the Board shall from time to time direct. And said Board shall make an annual report of its proceedings to the Governor, by the first of December of each year, together with an account of all moneys received and disbursed by them pursuant to this Act.

SEC. 8. Any person who shall receive a certificate from said Board to practice dentistry, shall cause his or her certificate to be registered with the County Clerk of the county in which such person may reside, and the County Clerk shall charge for registering such certificate a fee of one dollar. Any failure, neglect, or refusal on the part of any person holding such certificate to register the same with the County Clerk as above directed, for a period of six months, shall work a forfeiture of the certificate, and no certificate, when once forfeited shall be restored, except upon the payment to the Board of Examiners of the sum of twenty-five dollars, as a penalty for such neglect, failure, or refusal.

SEC. 9. Any one who shall knowingly or falsely claim or pretend to have a certificate or license, diploma, or degree, granted by any society organized under and pursuant to the provisions of this Act, or who shall falsely and with intent to deceive the public, claim or pretend to be a graduate from any incorporated dental college, shall be deemed guilty of a misdemeanor, and shall be liable to the same penalty as provided in section six.

SEC. 10. Nothing in this Act shall be so construed as to prohibit any practicing physician from extracting teeth.

SEC. 11. This Act shall take effect immediately.

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THE BRITISH DENTAL ASSOCIATION.

ALTHOUGH not six years old it has about six hundred members. The president, Mr. W. Campbell, Dundee, said at the annual dinner, "I think the itinerating nature of this society to be a very valuable one, for in every place to which it goes it draws into itself a few of the less active members of the profession. I cannot conceive of men having a love for their profession keeping aloof from such a society, where certainly they would profit from the experience of their fellows, and get that conceit which is so apt to grow from separation, taken out of them."—*Journal of the British Dental Association*.

Our Aftermath.

RECREATION.—The idea that the preservation of health requires an occasional relaxation from the pressure of the usual pursuits is winning its way into favor. Its influence may be seen in the reduction of the hours of toil, in the early closing of business houses, in the practice of granting summer vacations to employes, in restricting the activities of business to the early hours of the day, and in the increasing number and popularity of summer resorts. How different from the practice in vogue years ago, even the night was trenched upon by business, and when recreation was indulged in only by the opulent.—*Med. News*.

NEURALGIA, ACONITE.—Aconite is the perfect physiological remedy against neuralgia, especially when it is based upon congestive or sub-inflammatory trouble, but its action is often slow, so that morphine will have to be given with it as a palliative, until great relief or a cure is effected. When there is a rheumatic element, colchicum may also be added.—*Cin. Lan. & Clinic (The Analectic)*.

OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. V.

SEPTEMBER 1, 1885.

No. 9.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

THOUGHTS ON FERMENTATION, ETC.

BY GEORGE WATT, M.D., D.D.S.

IN the process of fermentation old associations of chemical substances are broken up, and new ones are formed. For convenience, possibly, Liebig and others refer to fermentation as pertaining to compounds destitute of nitrogen, while they call a somewhat similar process of transformation in nitrogenous bodies, putrefaction. By bearing this in mind, some of the writers of a few years ago will be more readily understood.

The nature and characteristics of the fermenting principle or agent in yeast have been matters of earnest disputations, and the doubts are not yet fully cleared up. The question has its importance, for yeast may be taken as a type of fermenting bodies; and when it is fully understood, light will be disseminated where darkness and gloom have reigned. Much has been said and written on fermentation which seems to be a mere darkening of counsel. Pretenders have been numerous in this field. More than fifty years ago I saw a pictorial burlesque of this pre-

tense of knowledge. The first scene in the picture showed a boy, with one eye shut, pretending to watch the process of fermentation by looking into the bung-hole of a cask of beer. In the second scene he is attempting to look wise as an owl, as he says to his admiring comrades: "Ah, boys, I see that things is workin'." Much that has been said since is but little, if at all, more true and practical, with no better foundation.

A paragraph in the *American Chemical Review*, in this connection is worthy of notice, and is as follows: "ON THE EXISTENCE OF A SOLUBLE FERMENT IN YEAST.—Some investigations of Cochin have been published which tend to prove that yeast does not contain a soluble ferment. He prepared some yeast water according to Pasteur's method, by boiling one part of yeast in ten parts of water, and then filtering at once. The filtrate was mixed with beerwort, at a temperature of 25° to 30° C. (77° to 86° F.), but no fermentation set in; on sowing some of the residue in beerwort, fermentation took place with great rapidity. Berthelot criticised these results by saying that a liquid in which yeast is actually growing does not cause alcoholic fermentation, and that if a soluble ferment exists at all, it must be sought for under the influence of the food which the ferment is intended to digest. Cochin has further replied to Berthelot, and states that the ferment he used in his experiments was stable, and contained no organisms in a state of growth; he again asserts that it is not capable of inducing alcohol fermentation, but at the same time it is capable of inverting sugar."

On this same subject of yeast and the nature of its ferment, Liebig has given his views at some length, and with great clearness. Only a brief extract can be used here. Under the title of "Yeast or Ferment" he says: *The insoluble part of the substance called ferment does not cause fermentation.* For when the yeast from wine or beer is carefully washed with water, care being taken that it is always covered with this fluid, the residue does not produce fermentation."

"*The soluble part of ferment likewise does not excite fermentation.* An aqueous infusion of yeast may be mixed with a solution of sugar, and preserved in vessels from which the air is excluded, without experimenting the slightest change. What then, we may ask, is the matter in ferment which excites fermentation, if neither the soluble nor insoluble parts possess the

power? This question has been answered by Colin in the most satisfactory manner. He has shown that in reality *it is the soluble part*. But before it obtains this power, the decanted infusion must be allowed to cool in contact with the air, and to remain sometime exposed to its action. When introduced into a solution of sugar in this state, it produces a brisk fermentation; but without previous exposure to the air, it manifests no such property."

"The infusion absorbs oxygen during its exposure to the air, and carbonic acid may be found in it after a short time."

The micro-organists will claim that by exposing the soluble portion to air, as above described, it receives the germs which are essential to fermentation. But facts in the days of Liebig are facts still; and while the proof is not quite clear as to the germs, it is quite certain that the fluid absorbs oxygen during this period, as is proved by the almost immediate formation of carbonic acid in it. And besides, in the treatment of the ferment, as given above, nothing was done to destroy the germs already in the ferment, yet they are quite powerless till the liquid has received its necessary supply of oxygen. Of course all agree that minute organisms are essential to the process of fermentation and putrefaction, but it does not follow that they, and not chemical action, are the primary factors in the phenomena. The chemical agents will *act* as certainly as they are present; and it is a narrow and contracted theory that tries to exclude them in favor of their results.

Besides, the exclusive micro-organic theory finds no confirmation from analogy, in natural phenomena wherein the objects and processes are on larger scales, admitting greater accuracy of observation. In describing a riot no two witnesses before the court tell the same tale as to the events that occurred, even though each had opportunity to and did see all that transpired. And when we drop to minutiae, with all the disadvantages of deficient light, with imperfect and irregular refraction, with the objects looked at, not as they are, but necessarily through false comparisons, it is still more probable that the observers will disagree. Hence, at our associations we have heard earnest, and at least once, angry disputations, not as to the deductions to be drawn from the observations made, but in reference to what was actually seen. And this occurs sometimes when the disputants

look alternately through the same glasses at the same objects. For an illustration of this, think of one of the most noted teachers of histology on the continent telling what he sees, while other experts state that he is deceived by an optical illusion which he fancies he sees because the instrument is not adjusted to the proper focus. And though notwithstanding these "soft illusions, dear deceits arise" among the most competent, the mere tyro, who has scarcely looked through a lens except when playing with his grandfather's spectacles, speaks as positively and confidently as does the school boy in describing the scenes of his first visit to the traveling menagerie. Let no one, on reading this, infer that I disrespect or lack confidence in microscopic research. I respect it most highly, and deeply sympathize with the diligent laborers in that field of investigation, but an admiration for the true does not lead up to a blind belief of all that is enthusiastically told by those who often fail to know what they see.

It has been said that the exclusively micro-organic theory of fermentation and putrefaction does not find analogous proof in the more observable processes in nature. The formation and growth of living organisms in our lakes and rivers get up no processes similar to fermentation. As long as they are controlled by the vital principle, the water is satisfactory. But let the sway be given over to chemical action, as by their death, and destructive transformations at once begin. The oxygen which is one of their essential constituents, no longer held passive and in combination, by vital force, but set free and rendered active by death, forgets to await the formation of micro-organisms, and with the industry of the woman who, on the gallows, darned the stockings of the sheriff's children, while awaiting the coming of spectators, it goes to work, and while not objecting to incidental or secondary assistance, it is quite competent to discharge the task single-handed and alone.

In like manner, when water is to be purified,—to be freed from organic matter,—the process is not carried out by the action of organic germs, but "Lord Oxygen" comes to the front, and finding that the work pertains to the field of chemistry, he assumes command, and the campaign is carried through on that line, even "if it takes all summer." And so complete is his work that the late chemist and philosopher, Dr. John Locke, found and demonstrated that the water in the Ohio river just above the

mouth of the Big Miami was as fit for drinking purposes as that above the mouth of the Little Miami. The organic filth of Cincinnati passing into the river was burned by the oxygen dissolved in the water, till there was found below an increased proportion of nitrates, which are all soluble in water, and practically harmless.

And further, if dental caries were caused wholly and solely by the action of micro-organisms, it ought to be nearly unitary in its appearance and phenomena. I believe that dentists generally recognize some three distinct varieties of dental decay, aside from erosion. As chemical action is definite in its nature, I can readily appreciate the fact that if it is admitted to be the leading factor, these distinctive traits may be explained on the principle of different re-agents governing the action in each. Several acids may be, indeed have been, found under varied circumstances and conditions in the fluids of the mouth. Not all so found are capable of corroding the teeth, as will be granted when it is remembered that carbonic acid is always present when the fluids are normal. But of those capable of corroding, or acting chemically on the teeth, some will act with much greater energy than others, and their actions on the different constituents of tooth-substance vary greatly in nature as well as in degree. I shall try to specify some of the characteristics of these varieties of action in a new paragraph.

In perhaps the most common variety of dental decay, it is seen that, while the lime salts, or hard materials of the tooth-substance, are all taken away, apparently by solution, the softer, or gelatinous portions of the tooth are left in place, to be removed by slow oxidation, putrefaction, or other process. In another style of decay both hard and soft tissues are destroyed, usually with great rapidity, and in the debris are found traces of both divisions of dental structure. In a third variety the tooth is but little broken down, but while mainly retaining its shape or form, both dentine and enamel are found quite brittle. Probably no lime salts are dissolved and carried away in this variety, while in the first mentioned they are all dissolved out, leaving the organic tissue in place, and nearly or quite unchanged in color till, by the lapse of time, it is darkened more or less by the action of oxygen, on the same principle that the decaying leaves of the forest are slowly darkened by the same agency. Let it be borne in mind

that the third variety named has an almost jet black color, as one of its distinctive traits; and this blackness is not due to the gradual action of atmospheric oxygen, as in the darkening of the other variety.

It is doubtful if any one can be found so credulous as to believe that these varied conditions are produced by one and the same agency. By taking possible and probable chemical actions into consideration, each and all these phenomena are readily and easily explained. But let us leave out chemical action from our consideration of the subject, and what have we? and to what conclusions are we driven?

I shall not try to be minute here, but shall aim to be understood. In the first varieties of dental caries described, if the exclusively micro-organic theory is to be adopted, there must be minute organisms that, if animal in nature, prefer to eat dry, hard lime salts in the shape of bony matter, while highly nutritious soft, gelatinous, or proteinaceous matter is set before them in the greatest abundance. Or if the micro-organic germs pertain to the vegetable division of the organic kingdom, then we have grass, trees, leaves, bushes, or what not, that in growing assimilate hard unyielding matter as their favorite soil, while softer, more plastic, and to all appearances more nutritive and congenial materials are rejected, and we are expected to believe all this while it contradicts all else that is known of phenomena pertaining to the vegetable sub-kingdom.

And how can either bugs or bushes,—animal or vegetable germs—produce the phenomena pertaining to the third or black variety mentioned? Do the micro-organic vegetable growths yield minute nutgalls, in the way of dye-stuffs, to color the teeth affected? Or do the minute animals blast and blacken the affected teeth by blowing upon them “breaths of malice loaded with malignity?”

But I shall not press enquiry any further in this line. Let it suffice to say that in various circumstances, chemical re-agents may be and are found in the mouth that cannot remain idle, because governed by the immutable law of affinity, and that so certainly as they act they produce the leading and most obvious appearances found in any and all the varieties of dental caries. And this being so, why ransack all the minutely mysterious realms of Nature to find agents to explain the phenomena that

cannot fail to be manifested under conditions quite observable and well known to exist. Truth is always simple. Religious revivalists tell us that their greatest difficulty always is to get the sinners to realize the simplicity of salvation. They expect and look for mysteries, and are not ready to believe "the foolishness of preaching." In like manner the police detective often fails by looking too far away for the criminal. He fancies the great crime must have been perpetrated by strangers while the guilt may lie with his nearest neighbors. And in scientific research the same principle is constantly illustrated, especially when chemical action is involved. By the masses, and even by most teachers, chemistry is looked upon as a mysterious science, and therefore they are unwilling to recognize any of its facts which seem plain and simple. Were it not for this principle in the human mind our profession, with the plain chemical facts in view, as the same have been set forth from time to time, would not have wandered into the wilderness of micro-organic growths on expeditions of micro-organic botanizing or bug-hunting.

None deny the presence of germs in the mouth, nor that in filthy mouths they are rapidly developed. But it is denied that they are the primary factors in dental decay. And now let those who deny the action of chemical re-agents tell how these are to be kept from acting when present. For example, tell how to prevent nascent hydrochloric acid from acting on exposed dentine when in contact with it. And let it be said, before dropping the subject, that all the phenomena of the most common variety of dental caries is produced by this acid and the subsequent action of oxygen on the organic matter left undissolved within the cavity of decay. When Jones's pet pig had been carried off, and he found the tracks of a bear leading to and from the pigpen, it was supposed he would blame the bear with the theft. But, no, he got out a search warrant, and ransacked the premises of the Thompsons and the Berrys, who all had unblemished reputations, and were vegetarians, besides. The present wild-goose chase after the causes of caries is quite as reasonable as the conduct of Jones, to say the least.

This was begun for a two page "special;" but, like the sweet-brier over the grave of Lady Lovell, "it grew and it grew." If the reader will forgive I may be tempted to do it again. And he may think that I have wandered from the subject; but "Etc." has a wide range.

INDIGESTION OR DYSPEPSIA.

BY GALEN, XENIA, O.

[Continued from No. 8, Vol. V.]

THE most common causes of dyspepsia are the combined influences of sedentary habits, and errors in diet. A certain amount of proper exercise is necessary to maintain the vigor of the body, and the stomach partakes of the debility if indigestion exists. If the quantity and quality of the food were in proper relation to the reduced energy, the system would suffer in a corresponding ratio, yet the stomach itself would not necessarily suffer. We have observed that while the gastric energies are impaired, or at least wanting tone and vigor from sedentary habits, the diet practically the same, the stomach does its work, and but little uneasiness or inconvenience is felt; yet the foundation for indigestion is laid, if the habits are not corrected, and it is sure to follow. Here we have a weakened stomach, the result of undue exertion in order to effect chymification, and a sort of languor takes place that requires stimulation. This if allowed to go on, becomes in time, a steadily diminished energy, until the organ becomes unable to perform its functions. This condition of affairs is known as *dyspepsia*.

The habitual use of food, difficult of digestion, has the same effect in a healthy stomach; it produces an indirect debility, as the result of increased action. For when the stomach receives food difficult of digestion, the amount of labor to digest and assimilate such food is largely increased, and the powers of the system being unable to carry this burden, its flagging energies become exhausted.

Large quantities of food cause over-distension, and produce a weakened condition of the muscular coat of the stomach, the same result as from improper food. Food improperly masticated acts in the same way as indigestible food, and produces a like result. The habit of eating rapidly produces the same effect, partly from improper mastication, and still more from overloading the stomach. The stomach is unable to appreciate such food, and hence the feeling of satiety is not felt until there is overloading. In speaking of indigestible food, it must be remembered

that the term is used in a relative sense, and has reference to energy of the stomach. Those articles of diet that a strong laboring man relishes and digests readily, are entirely inadmissible when taken by those of sedentary habits or a weakened stomach.

The excessive use of alcoholic liquors, opium, or other cerebral or nervous stimulants, especially strong coffee and tea, produces dyspepsia in the same manner that indigestible food does by over-exciting the stomach, and thus causing secondary depression and ultimate loss of power. Spices and other condiments have the same effect by exhausting the excitability of the stomach, though their effect is less hurtful because nervous functions are less operated upon.

In fact, any substance taken into the stomach that produces an undue excitement of the nervous functions, does mischief, and if persisted in will in time produce dyspepsia. Whatever calls off the nervous energy concentrating it elsewhere, depresses the gastric action and favors the production of indigestion.

Intense and long continued study, or other absorbing mental occupation has this effect. Exhausting and excessive muscular efforts have the same effect.

Anything that has a depressing effect upon the stomach may be a cause, such as tobacco, ice-cold water when the body is heated, and depressing emotion, such as grief, anxiety, and fear.

From the above it appears that pure dyspepsia consists essentially either in depression of the stomach arising from the withdrawal of its ordinary supply of nervous influence, or from some immediate sedative influence upon it, or in positive debility, from the loss of excitability, as the result of over stimulation. In either case the stomach performs its functions less efficiently.

In the process of chymification, we have *first*, the secretion of gastric juice for solution of the food; and *secondly*, the admixture of the food with the juice by its peristaltic action.

When the stomach is at rest there is less of the solvent secreted and less muscular movement, which are necessary to favor digestion. Hence, when food is introduced into the stomach, especially that difficult of digestion, it remains longer undissolved, and sometimes not dissolved at all. When this happens, chemical affinities decompose this undigested food, and new substances are formed, such as acid and gaseous matters. These in

their turn produce flatulent eructations and regurgitations, which are chiefly acid in their character. There is an alteration in the quality of the gastric secretion, the result of enfeebled energy, and marked changes take place, so that what was comparatively a bland liquid becomes acrid and irritating.

This altered secretion, with the undigested food remaining in the stomach, acting as a foreign body, together with the acid, combine and produce a vascular irritation of the mucous coat, and this in its turn, with the above state of affairs, excites the nervous portion of the muscular coat, hence we have heartburn, or cardialgia, gastralgia, and, now and then, vomiting. The headache and vomiting of dyspepsia, and the peculiar uneasiness in the epigastric region, which is pathognomonic of the disease, arise possibly from defective innervation. The sense of weight that is experienced in the epigastrium after eating, is occasioned by the undigested food and the failure of the gastric fluid to respond to the call of the burdened organ and cause its removal. Accompanying, and by no means a small factor in this disease, is *hepatic irritation*. The bowels, through sympathy with the stomach, the liver, and possibly the pancreas, become enfeebled in their functions, and each of these derangements requires attention. It is rare to find a case of dyspepsia without the liver complication and vitiated bile secretion, which if not removed soon, cause congestion of the portal circulation and bring other troubles.

In the treatment of dyspepsia, the first and most important indication is the removal of the cause, and to this end we have, as the means employed, the regulation of the diet, exercise, and the general habits, moral as well as physical.

The first rule is, avoid all food difficult of digestion, choosing only articles that are known to be non-irritating and that are found, after sufficient trial, to best agree with the enfeebled stomach. But what agrees with one may wholly disagree with another, or what is found digestible by one may be wholly indigestible by another.

Oils, fats, acid fruits, rich pastry, are to be avoided, and articles that are pasty or doughy, or that form a tenacious mass with water. These resist digestion, because impenetrable by the gastric juice. Among the articles of diet that are admissible to the dyspeptic may be mentioned, stale wheaten bread, Graham bread, crackers, well-boiled rice, Irish potatoes either roasted or

boiled. Tomatoes agree with some, and often prove a laxative. Ripe peaches, ripe blackberries and redberries may be indulged in without injury. Good fresh milk is generally admissible and forms a good diet for emaciated persons, especially when there is danger of gastritis.

Among the meats may be mentioned tender mutton or beef, or both, while the common fowl and turkey would better be avoided. The flesh of wild animals, such as venison and game can be used. Oysters, soft-boiled eggs, terrapins, well cooked. Condiments, such as salt, mustard, pepper, etc., must be used in moderation. The best drink is cool water. The vinous and malt liquors, though they may give temporary relief, are positively injurious, if persisted in any length of time.

It must be remembered in regulating the diet of dyspeptics, that the stomach is often very capricious, and takes fancies, which may upset ordinary rules; yet it is well oftentimes to indulge to a limited extent.

The manner of taking food is of importance, and much depends upon it; food should be taken slowly, well masticated, and cheerful and pleasant conversation should be indulged in at the table. Large suppers should be avoided, while the main meal of the day, should be dinner. Avoid fluids, at meals, as the powers of the gastric juice are diminished by dilution. A meal never should be taken immediately after fatiguing exercise; for the stomach partakes of the general languor, and is for a time unable to digest its food. Exercise is necessary to equalize the excitement, and thereby cause each organ to perform its proper functions. For if any portion of the body is unduly excited, the blood and nervous force are concentrated at that point; and the stomach, when it wants this influence for the purpose of performing its appropriate work, fails to get it, and we have a languor and want of tone that amounts to loss of functional power. To overcome this difficulty, we have active and passive action. By the first we act on the viscera, by the second, the voluntary muscles. Of the passive exercise, the best is horseback riding, and riding in a stage coach, on a rough road. Walking is also of benefit to the dyspeptic. In the matter of exercise, care should be taken, not to push it to the point of fatigue.

In the matter of habit, regularity and moderation should be observed; a certain hour for retiring and for rising, allowing six

to eight hours for sleep, and allow nothing to interfere with this custom. Relaxation from severe study, and business is essential in the cure of dyspepsia. Yet the mind must not be left entirely without occupation. Light reading, cheerful society, innocent amusements, and moderate professional occupation are requisite in the treatment. A visit to some watering-place, a sea-voyage, is often of advantage.

The individual treatment is best accomplished by the two principal indications, first, keep the bowels open, and secondly, to moderately stimulate the stomach, the first by laxatives, the second by tonics.

A favorite prescription is hydrargyri cum creta, or podophyllin, nux vomica, pepsin, bismuth and ipecac. In my practice this has proved of more general benefit than any other one combination. Of course this is not to be adhered to *nolens volens*, but other remedies may be used with benefit. Very anæmic persons require a more energetic tonic, such as iron, phosphorus, etc.

Finally, the use of hot water, before or after meals, is of signal benefit, in the treatment of dyspepsia. A cup of water taken before breakfast, temperature 110° or 120° Fahrenheit, and after dinner and supper, will be found to be good practice.

REPLANTATION OF TEETH.

BY DR. C. S. PHILIPS, GOLIAD, TEXAS.

I WOULD like to give the readers of the JOURNAL my ideas of replanting teeth and my success. I believe for the four superior and inferior molars, where they have abscesses and they are to be filled, that the best and most satisfactory to both dentist and patient is to extract the tooth, fill and replace again. There is less danger of an abscess and I have more confidence that I have filled the nerve canal. I have seen so much of this nerve canal filling done in the mouth, and more failures than successes, that I have become prejudiced toward such practice as filling nerve canals of molar teeth, where the roots are not straight. I do not put any confidence in filling nerve canals in teeth where the root is very thin. To test the filling of such teeth, let some one take two or three molar teeth with thin and crooked roots and

imbed the roots in plaster, then give them to some one who has not seen them before they were imbedded and he will see what the result will be. It will be a failure, and in the mouth it would be worse than a failure. It would be periostitis. I fill the roots of teeth in the mouth only where I find the nerve canal large and straight then I get a good view, and can see and know what I am doing. My conscience is clear, my patient pleased, and I am happy to know that my patient will not come back in six months or a year with a swelled face.

On reading the dental journals, being a subscriber of five of the leading ones published, and occupying all of my spare moments in reading, I am astonished to see how fearless some of the profession go at nerve canal filling, and pronouncing it a success. It reminds me of the story of the two men on a fire hunt for deer who had splendid success for a while, but after the lapse of time they shined a pair of eyes, and one plugged away and killed his deer and claimed another achieved victory, until further time revealed that a colt had been killed for a deer. So it is with a great many pulpless teeth that are filled. Your patient is not killed, but badly crippled. I saw a case a few days ago of nerve canal filling in a superior central incisor of a boy aged 15 years, that was a disgrace to the profession. The root of the tooth was a little crooked and the drill had entered at the orifice of the nerve canal and had come out at about half way up the root at the palatine surface, which produced periostitis, and the tooth was extracted, when it revealed the cause of the suffering of the patient and the ignorance of the dentist. I also saw similar cases exhibited by Dr. McKellops, of St. Louis, at the Southern Dental Association at New Orleans, in April, where the dentist had attempted to fill the nerve canal. He drilled through the side at about half way of one and through the foramen of another, and filled with cotton, which was forced through into the alveolus, the result was the same as in the other cases mentioned. I heard Dr. Morrison, of St. Louis, read a paper on *The Reckless Sacrifice of Tooth-Substance in Devitalized Teeth*, in which he said that he had a case of a lower molar with a very large mesial cavity of black decay which he filled. But his patient soon came back troubled with neuralgic disturbance, and he afterward made a small hole, the sixteenth of an inch, and found a pulp nodule of the size of a quail shot. He removed the

pulp from both roots and tore all the pulp tissue from the nodule and pushed the nodule out of the way and filled the nerve canals successfully. No doubt the Doctor thinks that he has saved that tooth, but my opinion is that in six months or a year his patient will come back with an abscess, from formation of phosphureted hydrogen gas in the nerve canal. I have broken open a great many molar teeth to examine them, and I find that fifty per cent. of them have roots so crooked and thin that it would be impossible for Dr. Morrison or any one else to fill in the mouth. I will admit that there are some that can be saved where the roots are straight and the nerve canals large. But in crooked, narrow, contracted nerve canals, it is a fabulous tale. The best and safest way to treat such teeth is to extract them, remove nerve, enlarge the canal, fill and place back. My mode of operation is this: where I find a molar that has an abscess, or the nerve has to be devitalized, I prepare everything so as to have the tooth out the shortest time possible. I then extract the tooth, wrap it in a soft napkin saturated in carbolized water about fifty per cent., keeping it to about 68 degrees of heat. Where the tooth is wrapped in a soft napkin there is no danger of bruising its periosteum. I take my electric dental engine, enlarge the nerve canal with a small Brewer's drill, cut off the apex of root, fill with gutta-percha through the root. I then fill the crown with gold or amalgam, finish off the filling, immerse in my carbolized bath until I syringe out the socket well and then gently replace tooth. Before replacing it I file a groove lengthwise of the roots so as to allow the coagulated blood to escape while the tooth is being replaced. I then take red gutta-percha, warmed, and plaster around it and the adjoining teeth, so as to hold it in position until reunion takes place, and dismiss my patients instructing them to call next day, when I paint the gums around the tooth with tincture of myrrh, directing them to use the myrrh three or four times a day. If inflammation should set in, I paint the gums with tincture of aconite, using four or five times daily, which will arrest the inflammation. After four or five days I remove the gutta-percha and substitute silk ligatures, passing them alternately over and around it and the adjoining teeth, letting it remain thus at least ten days, when reunion will have been firmly established, if at all, and no further treatment is necessary.

I have had a great deal of experience in replanting teeth for several years and am proud to say I have not lost a single case, while, on the other hand, I have lost many by filling in the mouth. I do not see why more of the dental profession do not adopt the plan of replanting teeth. It is just as reasonable to extract a tooth, replant, have a reunion of the periosteum take place and have it become healthy, as it is for a broken arm or any other member of the body to heal.

I will quote a case by Dr. D. E. Peterson in the *Dental Cosmos*, vol. 24, No. 6, 1882, on replantation of two central incisors, which will prove that my theory is correct. The case was a child seven years of age, who fell from a swing January 16th, striking her face against the door post. The mouth being open the external parts were simply bruised. The right upper central, which was just erupting, was torn from its socket and turned backward toward the palate. The tooth was reset with the fractured bone and banded to its place, and in two months from the time of the accident not a trace of the injury could be seen, the gums are completely closed down and the tooth is firm and strong. I have cases where I have extracted the molar teeth, filled the nerve canals and crowns and placed them back in their sockets for patients forty years of age; and I defy any dentist to distinguish the teeth which were replanted.

I would like to hear some of our brethren's ideas on this subject; and if there are any who have not tried it, I would like for them to do so, and report their success through the journals.

TARTAR, OR SALIVARY CALCULUS.

SALIVARY calculus seems to be, as yet, but partially understood by many in our profession. None of us know all about it, and if any one finds it all out, we trust he will tell the rest of us.

Occasionally we find one who has reached middle or even old age without having the least sign of this precipitate about the necks of the teeth; but such persons are almost as rare as those who can drink whisky daily and still reach old age.

What is it? Well, mainly sub-phosphate and carbonate of lime, with an intermixture of epithelial and other organic matter, and as the organic materials undergo the process of putrefaction, offensive gases, more or less held in solution, are also present.

Why is it deposited in some mouths, and not in others? The lime salts named above, are probably present in all normal saliva. But when everything else is normal and healthy, they are held in solution. But it is well known that water, is the chief constituent of saliva, and that sub-phosphate and carbonate of lime are but slightly if at all soluble in water. But normal saliva is saturated with free carbonic acid, and when thus charged it is able to dissolve and hold these lime-salts. A part, perhaps the greater portion of this normal carbonic acid is contained in the saliva as it emerges from the ducts; but if not enough to saturate is present, the residue is readily and promptly taken from the atmosphere.

If by any process this carbonic acid is taken from the saliva, it can not hold the salts, and they are precipitated as tartar. Carbonic acid will combine with any ordinary alkaline substance, hence the presence of an alkali in the saliva neutralizes it, and the salts are precipitated as already stated. In an article in the number preceding this we spoke of alkaline carbonates having the same effects. That needs a little explanation, and even modification. Those alkaline substances with which bicarbonates, as well as carbonates are formed by the union of the acid, will afford such action. For example the carbonate of soda will take carbonic acid to form the bicarbonate.

But the alkali that nearly, if not quite always takes this carbonic acid from the saliva is ammonia. It may be a result of the putrefaction of nitrogenous matter within the mouth. It is sometimes detected in the breath, and possibly may be given off with the secretions of saliva, mucus, etc., in debilitated constitutions, undergoing what is known as ammoniacal degeneration. To the extent that ammonia is thus found, death has occurred, as this alkali always suggests death and rottenness.

All this has been told before, but many still seem not to understand it, hence "line after line" becomes necessary. Any one by stopping to think, must realize that ammonia and carbonic acid can not be held in solution in the same liquid, without combination taking place.

To sum up: Normal saliva though not in itself able to dissolve subphosphate and carbonate of lime, by the aid of free carbonic acid usually dissolved in it, is enabled to dissolve and hold them in complete solution. If from any cause, as expulsion or combination, it is removed from the saliva, these salts are pre-

cipitated as tartar. Ordinarily the carbonic acid is taken into combination with ammonia, abnormally present. To guard against the precipitation of tartar on the teeth, aim to prevent ammoniacal degeneration, and the formation of ammonia by the putrefaction of nitrogenous substances within the mouth. And from all this it follows that good health and cleanliness are the appropriate preventives of the deposit of tartar.

But why object to the presence of salivary calculus? First it is dirty. Being porous it condenses gaseous matters and vapors, as well as liquids within its pores. As part of its own bulk, as well as some of the materials held within it, are nitrogenous, putrefaction takes place. Poisonous and offensive emanations are given off, thus rendering the victim unfit for refined society, while poisoning him gradually to death through the mucous membrane of the alimentary and respiratory organs.

Locally, by increasing deposits it gradually but surely detaches the gums from the necks of the teeth, and by local poisoning and pressure, it brings on local disease, which, by its interference with the process of nutrition, and by blood-poisoning, always impairs the health, and sometimes destroys the life of the victim. Of course if due relief is not sought, the teeth are loosened and lost, and in a pathological sense it may be said of the unfortunate victims, as was said more than eighteen centuries ago, "Their throat is an open sepulcher."

To break up the tendency to the deposit of salivary calculus, it is important to improve the general health. As the morbid state is in the direction of scurvy, antiscorbutic treatment is advantageous. Salt meats may be avoided with profit. Fresh vegetables will be found advantageous. Outdoor amusements and labors should be practiced. And acids, vegetable or mineral, should be used as tonics or alteratives. Citric acid, as in lemons, is both good and pleasant. Pure vinegar, diluted and sweetened, and used with the regular meals, will be found excellent.

Of the mineral acids, the sulphuric is as good as any, perhaps. The aromatic sulphuric acid, called Elixir vitriol, taken in sweetened water, is pleasant, and should be taken after eating. Twelve to twenty drops three times a day answer a good purpose. Or if it is not at hand, the dilute sulphuric acid will do for this purpose quite as well, and is of the same strength. Sometimes when dilute sulphuric acid is referred to in society, a member

interrupts to ask the extent of the dilution; but it ought to be understood and remembered that the dilute is an officinal preparation, and of the same strength as elixir vitriol. This acid has one advantage over most of the vegetable acids, in that it increases the secretion of bile, which is often an important consideration, as in most cases of ammoniacal decline the liver is found torpid.

Of course, in carrying out the constitutional treatment, the local must not be neglected. To leave the mouth in its filthiness, while aiming to build up the constitution, would not be more reasonable than to leave the excrements in the sick room while treating a case of typhoid fever. Every portion of tartar must be removed. The brush must be diligently and regularly used. Friction on the gums with pressure should be practiced. Local depletion should be resorted to when needed. The local use of alteratives, tonics, astringents and disinfectants should not be neglected when indicated. General principles, and not recipes, must govern in each case, if we are to have proper and judicious treatment. Of course this implies educated practitioners; but none others should undertake the treatment of these and similar conditions.

When a case has been neglected till the teeth are much loosened by the destruction of the sockets, before the patient applies for treatment, it is well, sometimes, to support the teeth in their proper positions. A simple mode of attaining this, which answers the purpose in many cases, but of course not all, is to weave a thread of floss silk back and forth among the teeth, so that each tooth is encased in a loop. Having then to stand or move together, their motion, to a great extent, is prevented. To saturate the silk with a solution of salicylic acid and dry it before using, adds to the cleanliness of the practice. When but one or two teeth are loosened, a fine wire is found convenient in fastening.

The reader may be much surprised to see so much attention given to this condition, especially so late in the history of dental surgery. But it is well known to physicians, and to dentists too, I presume, that notwithstanding the attention it has received in the past, more teeth are lost during middle life by this condition than by caries. And it is very evident that it has far more to do with the impairment of health than has caries. Just think of the filthy, diseased, poisonous fluids and semi-solids being commingled with every particle of food swallowed! It is strange

that the victims are not too much disgusted to eat. Though not fastidious, the writer has often been unable to take nourishment for hours after looking into one of these "open sepulchers."

A NEW MODE OF TAKING THE ARTICULATING IMPRESSION.

BY STEWART J. SPENCE, SAN FRANCISCO.

THIS is, in epitome:—Sink both arches into a lump of softened wax, then severing this impression horizontally, return the two pieces to the mouth, and obtain the correct bite by repeated closures.

The details of the operation are:—I trim down a piece of wood to the width I want the closure of the arches, and thrust this into a lump of softened wax, directing the patient to bite down through the wax to the wood. The wax should be large enough to completely cover the palate and teeth, and should be cooled before it is removed from the mouth. It is then severed by a long thin knife warmed in hot water, care being used not to cut through any cavities formed by the teeth.

The impression thus severed is next returned to the mouth, having been first coated with soapstone to prevent adhesion of the cut surfaces, and trimmed of surplus wax, which might ride on the muscles or distend the lips. Also cut away to give room for the tongue. Restored to the mouth, after the first closure the operator holds the lips apart, and planes the wax in front so as to bring the halves in line with each other perpendicularly, and also cuts a line perpendicularly across this planed surface, from the upper to the lower half of the impression, so that if future closures deviate from the first the deviation can be detected. Repeated closures are made until the obviously correct bite is obtained, and then the patient should be directed to bite very firmly, so as to correct any riding on the muscles, and insure the impression being in contact with the arches. Before removing it from the mouth mark the median line, etc., as usual, and also cut three or four scratches from one-half to the other, by which to restore their relative position, should they separate, when out of the mouth. It will be noticed that the severed

edges stand apart slightly, do not press them together. Run a hot knife between them.

Before pressing home the plaster model into the articulating impression it is well to cut away the wax at two or three places down level with the bottom of the arch, so that it may be seen when the model is entirely down.

As ordinary wax is rather liable to bend or break in this operation, I have composed a material which has remarkable toughness and hardness, by melting together about eight parts of wax, three of gutta-percha and one of resin, flavored with oil of wintergreen. It has several other very excellent uses such as temporarily fastening teeth to gold plates (being very adhesive), but has rather too much shrinkage in cooling for ordinary impressions.

By this mode there is a little more trouble to the patient and operator at the first sitting; but a great deal less afterwards, as two years experience has demonstrated to the writer.

AMERICAN DENTAL ASSOCIATION.

TWENTY-FIFTH ANNUAL MEETING.

Reported for the JOURNAL by L. P. Bethel, D.D.S.

THE meeting was held in Curtiss Hall, Minneapolis, Minn., August 4, 5, 6 and 7.

FIRST DAY.—MORNING SESSION.

The meeting was called to order at 11 o'clock by President C. N. CROUSE.

Roll call was next in order.

By motion the reading of the minutes was dispensed with, they having been printed.

A partial report of the Committee on Credentials was received.

The Secretary reported on applicants for membership. Report adopted.

Report regarding the transactions of the association was adopted.

Chairman Pierce made a report on volunteer essays, that they be placed in the hands of the committees, etc., which was adopted.

A motion was made that the essay of E. Parmely Brown, laid over from last year, be read at this meeting.

By motion a special committee of three was appointed to arrange for clinics, the committee consisting of Drs. Smith, Gardner and Field.

DR. SMITH (O.) moved that the transactions of the association hereafter be bound in a more substantial form suitable for the library. Carried.

The Secretary, DR. G. H. CUSHING, announced that during the past year Dr. J. G. Ambler of New York, and Dr. Isaiah Forbes of St. Louis, two old members of the association, had died, and by motion a committee, consisting of Drs. Taft, Spalding and Atkinson, was appointed to prepare appropriate resolutions.

Adjourned.

EVENING SESSION.

The meeting was called to order at 8 P. M.

Reading of minutes.

Reports of the different sections were received, after which the President announced that he had no address for this year, as he had been so busy with other things he could not attend to it. He suggested, however, that if more work in the way of getting sections and committees in shape and at work should be done before going to conventions, it would greatly facilitate the proceedings.

DR. A. H. THOMPSON (Kan.) reported on Section VII., Physiology and Etiology, and said that Prof. Barrett's paper had been accepted and would be read. A brief synopsis of the paper is as follows:

EARTHY PHOSPHATES.

The administration of earthy phosphates to pregnant women and to young children has been the practice of many physicians. If the teeth of pregnant women became defective, they thought the changed character due to the lime salts being abstracted, to be used in the building up of the child. To supply the deficiency

of lime salts in the body, lacto-phosphate of lime was given. The writer himself had been a believer in the treatment until convinced that he was traveling in the wrong direction.

He here cited a case of a patient who had had two children. For the first she had no treatment; but during the second term of pregnancy, he administered the lacto-phosphate of lime. The labor of the second was easier, and the patient suffered less decay of the teeth than formerly; but the child had all manner of difficulty in getting its teeth, and they were badly malformed. The other cases he had treated did not result in the same way however. He finally concluded not to feed mothers this or anything containing much of the lime salts, for there is an abundance in the food we take. If women would live upon wheat flour, there would be more than enough lime salts supplied to keep the system in proper condition. Some of the physiological reasons were given why the giving of earthy phosphates is a mistaken treatment in the case of pregnant women and young children.

All pabulum is originally derived from the earth, but no animal or class of animals can derive nourishment directly from the earth; that function rests with the vegetable kingdom solely. Here it is organized and is then capable of digestion by animals. The salts thus organized by the vegetable and reorganized by the animal feeding upon the vegetable, as ruminants, are still capable of assimilation by man, but animals that eat flesh, as carnivora, and reorganize it, are then themselves uneatable except some fishes and birds. It follows then that if inorganic matter is introduced into an animal organism, it must pass through unchanged. Some say the principles of animal bodies are made up mainly of inorganic materials; but they never exist as simple substances, except possibly in the case of the iron in the blood. Lime salts are not taken into the system as such, but are elaborated within the organism and built up there. Therefore, if lime salts are needed, do not give the inorganic, for the system will not elaborate it, but must derive its supply from the vegetable.

There are many people who live entirely on a vegetable diet, and the parts are always well supplied. Animal life may subsist on almost any vegetable or animal substance and live, but it cannot do so on inorganic materials, for if administered, they are gotten rid of as soon as possible. The medical pharmacopœia is made up greatly of inorganic matter to assist in the action of

other medicines. They have no particular virtue and he could, therefore, see no reason for their use.

DISCUSSION.

DR. SPALDING (Mo.): After substances are organized in the vegetable, the animal tissues can make use of them. There is one substance in common use for man and animals, and that is sodium chloride. Taken into the system it is known to be eliminated, but the quantity is always deficient. Many domestic animals will not do well unless supplied with this salt. Is it decomposed and made a part of the body, or what becomes of it?

DR. PEIRCE (Pa.): Man is not the only being that takes foreign food for remedial agents. The horse sometimes eats clay. The dog and cat grass, etc. Wheat and the straw are grown by virtue of lime in the land; and the lime is still inorganic. The animal eats the product and the salts are still inorganic. It is diet that makes the animal not *vice versa*. The food habit gives us the organism and this always precedes the organ. All animals have the same structured teeth, but the change in shape is due to the change in diet. Unless nutrition and assumption go hand in hand, we cannot have proper structures.

DR. ATKINSON (N. Y.): Chloride of lime and water have both been spoken of as inorganic when they were not. There are articles good for medicines that are not good for food. Any substance that can act on the system may be a food, a poison or a medicine. They act by the latent energies in the organism. Some say that common salt is not elaborated, but passes through the system unchanged. You might as well say that the oxygen of the air is not appropriated by the lungs, but is passed out and is as good as ever; but it is not. One man said the food habit produced the form of the teeth. They forgot that it was the energy that arranged the matter that brought about the change. The seat of hunger is where the hunger is satisfied.

DR. SPALDING (Mo.): Did Dr. Atkinson say that salt does not pass through the system unchanged? Do you deny it?

DR. ATKINSON: I do deny it!

DR. SPALDING: How is it proven?

DR. ATKINSON: Only by seeing if its action after passing is the same as before.

DR. ABBOTT (N. Y.): During a number of years I made many experiments with the idea of producing a material change in children's teeth, but was not successful in producing any better result with than without the use of the lacto-phosphates. As ordinarily used they are not beneficial in the upbuilding of teeth, but it may yet be found how to administer them so as to get the results wanted.

DR. KING (Neb.): Did Dr. Atkinson say that the hunger was not in the stomach, but in the part to be supplied?

DR. ATKINSON (N. Y.): The proof that hunger is not always in the stomach, is that if you put on a belt tightly, and thus bring the walls of the stomach in contact, so as to keep up the blood energy, you will not be hungry.

DR. BARRETT (N. Y.): There are many inorganic substances in the body that are only for holding in the proper solutions some substances that may be for nutrition. Sodium chloride changes the density of the fluids of the body that osmosis may go on more readily. This is the principle use of sodium chloride.

Adjourned.

SECOND DAY.—MORNING SESSION.

The meeting was called to order by President Crouse at 9:30 A. M.

The minutes of the previous session were read and approved.

Miscellaneous business was next taken up, after which the discussion of Earthy Phosphates was continued.

DR. MORGAN (Tenn.) thought the forms of teeth might be modified by the food habit. They are never created by it. He thought some of the inorganic material was incorporated and elaborated to a certain extent within the system. That even the poorest food had a sufficient quantity of lime salts for the individual. Incrustations on the teeth show that there was too much mineral matter within the system. The matter might be taken up, but the trouble was non-assimilation of it.

DR. PATRICK (Ill.): It would be impossible to realize a vegetable kingdom without the forerunner of the mineral. This is also true of the animal and vegetable kingdoms. The consumed must pre-exist the consumer. The vegetable elaborates its material from the mineral, stores it up, and the animal elaborates it from the vegetable. Animals that live upon vegetables lived

before the flesh eaters. I am surprised to think any one would say that sodium chloride is appropriated by the system when it goes in sodium chloride and comes out sodium chloride. It is a stimulant and sets the molecules in motion. It passes off through the pores of the skin, etc., and sometimes combines with other minerals. A tooth when once formed is incapable of repair, except its cementum, for it is not built up like bone, from without inwards, but from within outwards. The pulp deposits less and less material until, in old age, the tooth pulp itself becomes hardened.

DR. THOMPSON (Kan.): Animal protoplasm appropriates the elements after they are formed by the vegetable. Man and all animals are but modified protoplasm. Vegetable protoplasm in itself contains about forty elements, while animal protoplasm in different tissues varies. The animal protoplasm is not capable of elaborating the mineral. If we do administer mineral food, we cannot direct it to the parts we want it to reach, for phosphate of lime is found in all the tissues. Assimilation is the great thing in nutrition.

DR. DARBY (Penn.) thought that some inorganic substances were elaborated. He cited a case of a child afflicted with rickets and could not walk. It craved lime so much that it would eat the plastering off the wall. Lacto-phosphate of lime was given and the child stopped eating the plaster and improved. He thought the administration of lacto-phosphates might, after years of administration, prove to be just what we want. Had seen good results from the administering lacto-phosphate in connection with cod liver oil.

Subject passed.

The report of Section III, Dental Literature and Nomenclature, was given by Dr. Atkinson.

DR. KULP (Ia.) then read a paper on Nomenclature describing his method of classifying cavities in teeth. The general classification is as follows:

Central	Insisors,	right and left,	upper and lower.				
Lateral	"	"	"	"	"	"	"
Cuspids	"	"	"	"	"	"	"
Bicuspids	1st & 2d	"	"	"	"	"	"
1st Molars	"	"	"	"	"	"	"
2d	"	"	"	"	"	"	"
3d	"	"	"	"	"	"	"

SURFACES—The six anterior teeth, superior and inferior, are labial, lingual, proximal, and occluding. Bicuspid and molars, buccal, lingual, proximal and occluding.

Division of surfaces longitudinally: Occluding or grinding, middle third and cervical third.

Sub-divisions: Right and left central incisors—labial, lingual, occluding, central proximal, lateral proximal, occluding, middle and cervical thirds.

Right and left lateral incisors: Labial, lingual, grinding, central proximal, cuspid proximal, occluding, middle and cervical thirds.

Cuspids: Labial, lingual, occluding, lateral proximal, bicuspid proximal, occluding, middle and cervical thirds.

1st. bicuspid, right and left: Buccal, lingual, grinding, cuspo-proximal, bicuspo-proximal, bicuspo-fissure, buccal cusp, and lingual cusp.

2d. bicuspid, right and left: Buccal, lingual, grinding, bicuspo-proximal, molo-proximal, bicuspo-fissure, buccal cusp and lingual cusp.

First upper molars, right and left: Buccal, lingual, grinding, molo-proximal, bicuspo-proximal, anterior fissure, cross fissure, postero-buccal prominence, antero-buccal prominence, lingual prominence.

Second upper molars: Buccal, lingual, grinding, molo-proximal, third molo-proximal, central fissure, cross fissure, anterior-buccal prominence, posterior-buccal prominence, lingual prominence.

Third upper molars: Buccal, lingual, grinding, molo-proximal, posterior and central fissure.

Lower molars: Buccal, lingual, grinding, proximal, buccal-pit fissure, central fissure, lingual cross fissure, buccal cross fissure, posterior fissure, anterior fissure, lingual posterior prominence, lingual anterior prominence and buccal prominence.

DR. SPALDING (Mo.): There has long been a want of the exact definition of terms. It is very necessary, and the committee think those presented in the paper just read are the best that have ever been given.

DR. THOMPSON (Kan.): Why do you leave out the terms mesial and distal?

DR. KULP (Ia.): The object is to simplify it so that all may

understand. If I say central incisor, lateral proximal surface, they know better what is meant.

DR. TAFT (O.): The subject is interesting and an important one to the profession. Terms that are definite, accurate, and most readily understood by our hearers, are the ones that we should use. Everything should be done for the attainment of the highest point in this respect. Those instructing our young men should be led in the right paths, and have an adopted nomenclature. This paper is a proper effort in this direction, and is the most effective of any yet produced. I would suggest, however, that to avoid repetition, masticating surface sometimes be used instead of occluding.

DR. MORRISON (Mo.): Eight years ago a man named Gillette produced a pamphlet that contained terms very similar to those given in the paper, but his use of mesial and distal seemed better and simpler than these.

DR. KULP (Ia.): It would mislead the student the same as posterior; he would think a cavity of a central incisor was on the palatine surface.

DR. TAFT (O.): We should use language that can be understood by all, and I know of no better terms than Dr. Kulp has given.

DR. MORGAN (Tenn.): Thought cutting edges, instead of occluding, would be better for the twelve anterior teeth.

DR. ATINSON (N. Y.): The term occluding is the term *par excellence*, which means the coming together of all the teeth.

The subject, by motion, was passed.

Section IV, OPERATIVE DENTISTRY, was next taken up, and Dr. Darby (Penn.) made the report.

J. PARMELY BROWN (N. Y.) opened the discussion on bridge work and displayed several specimens of his improved method by which nothing but the porcelain could be seen. A platinum pin was run through and baked in, so as to be entirely out of sight, and in the process, the sides of the teeth were fused together, thus making tight and indeed a beautiful piece of work.

DR. RYAN (N. Y.) next spoke of the advantages derived from the Herbst method of filling:

First—You can obtain better adaptation to the walls of the cavity.

Second—When you have mastered the operation, you can make the filling in less time, than by the old method.

Third—The patient suffers less of a nervous shock by non-use of the mallet.

The great difficulty was that the gold could not be as well condensed. His own method was to fill the cavity about 3-5 full by the Herbst method, and finish the filling by means of the electric plugger. Many specimens of work accomplished by this method were displayed.

DR. DARBY (Penn.) spoke of the Perry separator, the manner of applying matrices, etc., also displaying specimens.

DR. NOBLE made a report on the adaptation of half-bicuspid porcelain crowns.

DR. SOUTHWORTH (Ill.) read a paper regarding a breath protector.

DR. MATTHISON (Ill.) reported on a dental splint of his own invention.

Miscellaneous business was finished and the meeting adjourned.

AFTERNOON SESSION.

The afternoon was taken up by clinical work.

DR. NOYES (Ill.) inserted a contour filling in a central incisor.

DR. TIMME (N. Y.) filled a first left superior molar, posterior approximate cavity, by the Herbst method.

DR. RHEIN (N. Y.) also demonstrated the Herbst method, by filling a right superior first bicuspid, posterior proximal cavity.

DR. BROWN (N. Y.) made fillings in superior bicuspid and molar proximal cavities.

DR. MOORE (S. C.) treated a molar.

DR. MATTISON (Ill.) placed a porcelain front crown on a left superior lateral incisor.

DR. PATRICK (Ill.) demonstrated the striking up of gold crowns and caps.

DR. SWASEY (Ill.) showed the making of corundum points.

DR. HARLAN (Ill.) treated several cases of pyorrhea alveolaris.

DR. ST. JOHN (Minn.) made a small gold filling.

(To be continued.)

HEADACHES.—Dr. Brinton (*Detroit Lancet*) says that the most common causes of headache are decayed teeth and inequalities of vision.

FACULTIES OF DENTAL SCHOOLS.

REPORTED FOR THE JOURNAL BY L. P. BETHEL, D.D.S.

THE National Association of Dental Faculties held its second annual meeting at the Sherman House, Chicago, Ill., on Friday and Saturday, July 31st and August 1st.

The colleges represented were: Pennsylvania College of Dental Surgery, by Prof. C. N. Peirce; Pennsylvania University Dental Department, by Profs. Truman and Darby; Philadelphia Dental College, by Prof. F. H. Guilford; Boston Dental College, by Prof. J. A. Follet; Baltimore Dental College, by Profs. Winder and Foster; New York Dental College, by Prof. Abbott; Ohio Dental College, by Prof. Smith; Iowa University Dental Department, by Prof. Hunt; Michigan University Dental Department, by Profs. Taft and Watling; Vanderbilt University Dental Department, by Prof. Morgan; Kansas City Dental College, by Prof. Patterson; Chicago Dental College, by Profs. Harlan, Brophy and Cushing.

FIRST DAY.—MORNING SESSION.

President C. N. Peirce took the chair and called the meeting to order at 11 o'clock.

The minutes of the previous meeting were read and approved.

The Secretary then called the roll and had responses from all but two colleges.

Letters from Maryland University and St. Louis Dental College, pertaining to the work of the association, were read.

Dr. Winder moved that the Executive Committee be instructed to furnish an order of business that it might facilitate the work. Seconded and carried.

For that report Dr. Abbott offered the following:

Reading of minutes.

Roll call.

Reception of reports of committees.

Unfinished business.

New business.

Reception of new members.

Reports of officers.

Miscellaneous business.

The report adopted.

Dr. Abbott presented subjects for consideration, as follows:

Preliminary examinations—of what shall they consist and when take place?

Foreigners entering college—what to do with them?

Admission to the senior classes of juniors and foreign students who hold certificates or degrees from foreign countries.

Question of fees.

Final examinations.

The matter of text books was next in order, and by motion of Dr. Abbott, a committee was appointed to take the matter in charge and report thereon. Drs. Abbott, Winder and Truman were appointed.

Adjourned.

AFTERNOON SESSION.

Meeting again called to order, at 3 P. M.

The minutes of the previous session were read and approved.

A letter was read by Secretary Smith from the Illinois Dental College of Chicago. It had just been incorporated, and those connected therewith wanted to be advised as to the course of study in their institution. The communication was laid on the table.

Partial reports of committees was made, and, by motion, the reports were taken up and acted upon by sections.

The first that came before the convention was that of Preliminary Examinations. The report was accepted and discussed at some length.

Dr. Taft moved that the action of last year be referred to a special committee, who would take it in charge, suggest the particular branches, and the feasibility of getting up questions for colleges, etc., and report. Amended that Drs. Taft, Foster and Ingersoll act as the committee. Carried.

The regular order of business was suspended, and applications for membership were taken up.

Dr. Taft proposed Vanderbilt University of Tennessee.

Dr. Morgan, of Vanderbilt University, said that he had made

no application to join the association as yet, and thought under certain circumstances now existing, it would be impossible to join now, but was willing to make application and join next year if they would assure him that the university would be received.

This matter was referred to a special committee who made the following report :

Resolved, That in accordance with the statements of Prof. W. H. Morgan, of Vanderbilt University Dental Department, this association extends to him an invitation to participate in its deliberations, and will most heartily welcome the school which he represents as a member of this association, whenever in its judgment it shall apply for such admission.

The Executive Committee would here state that the application for admission, as a member of this association, has been made by the Vanderbilt University Dental Department, but under the circumstances the committee has concluded to not act upon it until our next meeting, in which conclusion Prof. Morgan fully concurs.

F. ABBOTT,
J. TAFT,
JAS. TRUMAN,
Committee.

Report accepted and adopted.

Regular business was resumed, and the topic of admission to the senior class was brought before the meeting, resulting in the following resolution :

Resolved, That applicants for admission to our senior classes from foreign countries shall be required to furnish properly attested evidence of study, attendance on lectures, etc., the same as is required of junior students, and pass the intermediate examinations.

Adjourned.

SECOND DAY—MORNING SESSION.

The meeting was called to order at 9:40.

The minutes of the previous session were read and approved.

A recommendation that the fees, as far as practicable, be made uniform, was adopted.

By recommendation, a committee of three were elected to settle all questions that might arise *ad interim*.

The different committees having been recommended, the President appointed the following :

Committee on Curriculum—Taft, Brophy and Ingersoll.

Committee on Text Books—Winder, Hunt and Guilford.

Recess of one hour was granted for committees to prepare reports.

Again called to order, at 11:30.

The report of the committee on curriculum was adopted and is as follows:

Resolved, That a preliminary examination be required for entrance to our dental colleges, such requirements shall include a good English education. In case of any applicant failing to pass a satisfactory preliminary examination, the other colleges of this association may be informed of the fact.

Resolved, That a candidate for matriculation who presents a diploma from a reputable literary institution, or other evidence of literary qualification, shall be admitted without further examination.

Resolved, That for preliminary examination we recommend the following questions:

1. Write your name in full.
2. Give date of birth, day, month and year.
3. Where were you born? town? county? state?
4. Where do you now reside? town? county? state?
5. What educational advantages have you had? Name the schools you have attended, and the time spent in each.
6. What branches have you studied? and to what extent have you pursued them?
7. In what occupations have you been engaged, other than that of student? and how long thus employed?
8. When did you commence studying dentistry? month? year?
9. How many months of actual medical and dental study have you had to date?
10. Have you attended a full course of any medical or dental school? If so where? and when?
11. With what preceptor or preceptors, have you studied? Give name and present residence.
12. Sign name in full.
13. Write an English composition of at least two hundred words upon a subject of the examiners' selection.

Further examination to be left to the judgment of the different faculties.

The work proposed to be given is as follows:

1. English Grammar. 2. Arithmetic. 3. Geography. 4. Modern History. 5. Government.

A failure to pass examinations may be communicated to other colleges.

By motion of Dr. Taft, a committee of three were chosen to draw up a schedule of the different branches and questions and forward to the different colleges.

Committee—Drs. Taft, Ingersoll and Harlan.

The report on admission to the senior class was adopted.

Resolved, That the colleges of this association will receive into the senior class, only such juniors as hold certificates of having passed a satisfactory examination in the studies of the junior year; this certificate to be a pledge to any college to which they may apply, that a previous term has been properly spent in the institution whence they came.

Resolved, That the certificate shall read as follows :

This is to Certify, That———has attended one full course at the——— College of Dental Surgery. He was absent from lectures———weeks. He was absent from the practical work———weeks. He was examined at the close of the session and found qualified to enter the senior class.

Resolved, That each student, upon completing one regular course in any college represented in this association, shall be furnished the above certificate, without presentation of which, he shall not be accepted by any of our colleges for admission to the senior class.

DR. WILSON moved that a committee of three be appointed to take into consideration the advisability of having a uniform practice in the furnishing of equipments for clinical work. Carried.

Committee—Watling, Wilson and Darby.

Dr. Taft moved the reconsideration of the motion to meet biennially. Carried.

By motion of Dr. Taft, the next meeting was to be held one year hence.

The committee on Text-Books reported next. In the report they recommended that the text books be gotten up by members of the faculties of the different colleges, etc.

A discussion followed, after which Dr. Taft moved that a committee composed of one member from each college faculty be appointed to take charge of the whole matter, and that they should thoroughly consider it and report at the next regular meeting. Carried.

The committee consisted of Dr. Winder, Baltimore ; Dr. Abbott, New York ; Dr. Taft, Michigan University ; Dr. Follett, Boston ; Dr. Truman, Pennsylvania University ; Dr. Ingersoll, Iowa ; Dr. Eames, Missouri ; Dr. Dennis, California ; Dr. Patterson, Kansas City ; Dr. Guilford, Philadelphia ; Dr. Smith, Ohio ; Dr. Peirce, Pennsylvania College ; Dr. Harlan, Chicago.

The Treasurer's report was referred to an auditing committee, whose report was adopted.

DR. ABBOTT moved that the assessment from each faculty be made three dollars. Carried.

The election of officers resulted as follows :

Dr. C. N. Peirce, President ; Dr. R. B. Winder, Vice President ; Dr. H. A. Smith, Secretary ; Dr. A. W. Harlan, Treasurer.

The Executive Committee appointed was composed of Drs. Abbott, Truman and Taft.

Adjourned to meet one year hence.

Correspondence.

"I charge you that this epistle be read."

TO THE NATIONAL ASSOCIATION OF DENTAL FACULTIES.

GENTLEMEN:—The Faculty of the University of Maryland Dental Department, desire to acknowledge the receipt of the Transactions of the National Association of Dental Faculties, and also the notice of the meeting to be held in Chicago, July 31, 1885, with Article VII of the Constitution.

I am directed by the Faculty of the Maryland University Dental Department, to inform your Association, that they will cheerfully comply with all the requirements relating to the graduation of students in dentistry, as adopted at the meeting held in New York city and Saratoga in August, 1884, so far as refers to *two* full courses of five months each in separate years, etc., and have published the same in our annual catalogue of 1885, copies of which have been mailed to the President and Secretary of your Association. At the same time, however, the Faculty of the University of Maryland Dental Department deem it inexpedient to join the National Association of Dental Faculties, for the reason that they believe the present curriculum of study, etc. in the University of Maryland to be superior to any graded course of study, such as is obligatory upon all dental schools joining your Association, for the reason that it (the graded course) restricts the junior students to the study of dental mechanism alone for the one session of the two comprising the full course, to the exclusion of operative dentistry, and therefore affords dental students the advantage of but one session in the acquirement of a knowledge of a branch of our science for which the time of two sessions is not too long. The Faculty of the University of Maryland Dental Department contend that students in dental schools should have all the advantages possible of the *two* sessions in *operative* as well as in mechanical dentistry, and that the adoption of such a graded course as that required by your association, and

which restricts the dental student in the manner referred to, must be *retrogressive* instead of progressive in dental education.

Respectfully, &c.,

FERDINAND J. S. GORGAS,

Dean of University of Maryland Dental Department.

BALTIMORE, July 28, 1885.

CHLOROFORM AND TINCTURE OF ACONITE LEAVES.

EDITOR OF JOURNAL:—Much has been lately said and written on the subject of local anæsthesia, and especially on the merits of cocaine. In my own practice, after having given the latter as thorough a test as possible in the short time it has been recognized in dentistry, and having followed, as near as possible, the experiments and suggestions of others, in connection with my own ideas, the desired results have not been attained. Perhaps I can profitably reopen an old channel by giving an account of the success obtained with some of the older remedies. To obtund sensitive dentine, I adjust the rubber dam, and apply chloroform and the tincture of aconite *leaves*, in equal parts, on a pledget of cotton, allowing it to remain some five or ten minutes, according to the degree of sensitiveness, and in almost every case, the necessary operation following is painless, a fact duly appreciated by the patient, and also gratifying to the operator. When the effect wholly, or even partially passes away, I repeat the application, again and again, if necessary, till the operation is completed. This combination will be regarded as an old remedy, but in its use I have obtained better results than with cocaine. In extracting I use chloroform and the tincture of aconite *root*, in equal parts. I apply the mixture to the gums about five minutes, or until they become more or less whitened. The effect is magical.

CLEVELAND, O.

FRANK DOWD.

A PAINLESS ESCHAROTIC.—A saturated mixture of hydrochlorate of cocaine with nitric acid causes only a slight pricking, but not painful, sensation whilst the escharotic effect is the same as when simply nitric acid has been applied.—*Drs. Randolph and Dixon.*

Compilations.

"Gather up the Fragments."

REMOVING SWALLOWED ARTIFICIAL TEETH.

THE following novel and successful method is detailed in the *Deutsche Med. Zeit.*:

A dentist in Fürth was sent for one night by a servant girl, who, during sleep, had swallowed a rubber plate with four canines [incisors?] and two bicuspid, with gold clasps for attachment to the natural teeth. The neck of the girl was found to be swollen and painful to the touch in the region of the larynx. The examination of the larynx gave no result; the plate had disappeared; but could be felt with the œsophageal sound. It had passed too deeply to be extracted and was pushed by the sound into the stomach through the cardiac orifice. That the plate might pass through the intestinal canal without injuring the latter, the dentist induced the girl to swallow a lot of spool cotton (thread), which was first cut into small pieces and incorporated in the white of egg beaten to "snow." The intention was to have the threads, steeped in the white of the egg, wrap themselves around the sharp points of the plate, and thus prevent injury to the intestines. Four days later the girl brought the ominous plate, and the latter was found to be completely enveloped, overspun, as it were, by the cotton threads. The patient said that she had no pain, or any other inconvenience, while the plate was resting in the bowels or during its passage out.—*Med. and Surg. Rep.*

OLD AGE AND DENTAL PROSTHESIS.

SIR HENRY THOMPSON (in the *Nineteenth Century*) says:

Another agent in the combination to maintain for the man of advancing age his career of flesh-eater is the dentist. Nothing is more common at this period of life than to hear complaints of indigestion experienced, so it is affirmed, because mastication is

imperfectly performed for want of teeth. The dentist deftly repairs the defective implements, and the important function of chewing the food can be henceforth performed with comfort. But without any intention to justify a doctrine of final causes, I would point out the significant fact that the disappearance of the masticating powers is mostly coincident with the period of life when that species of food which most requires their action—viz., solid animal fiber—is little, if at all, required by the individual. It is during the latter third of his career that the softer and lighter foods, such as well-cooked cereals, some light mixed animal and vegetable soups, and also fish, for which teeth are barely necessary, are particularly valuable and appropriate. And the man with imperfect teeth who conforms to nature's demand for a mild non-stimulating dietary in advanced years will mostly be blessed with a better digestion and sounder health than the man who, thanks to his artificial machinery, can eat and does eat as much flesh in quantity and variety as he did in the days of his youth. Far be it from me to undervalue the truly artistic achievements of a clever and experienced dental surgeon, or the comfort which he affords. By all means let us have recourse to his aid when our natural teeth fail, for the purpose of vocal articulation, to say nothing of their relation to personal appearance; on such grounds the artificial substitutes rank among the necessities of life in a civilized community. Only let it be understood that the chief end of teeth, so far as mastication is concerned, has in advancing age been to a great extent accomplished, and that they are now mainly useful for the purposes just named. But I cannot help adding that there are some grounds for the belief that those who have throughout life from their earliest years consumed little or no flesh, but have lived on a diet chiefly or wholly vegetarian, will be found to have preserved their teeth longer than those who have always made flesh a prominent part of their daily food.

[*The Journal of the British Dental Association* comments on the article from which we take the above, in part as follows:]

The perusal of such an article as this by the general public is, we believe calculated to do at least as much harm as good, and it is to be regretted that Sir Henry did not either choose a medical rather than a lay journal for the promulgation of his views, or else so elaborate and extend his arguments as to render them

less liable to misconception by the casual reader. In dealing with the question of mastication he seems to us especially to fail in his attempt at rapid explanatory generalization. Meat, though perhaps the chief, is not the only food which needs proper mastication, and we believe general experience warrants us in saying that even were the diet such as Sir Henry recommends, the assistance of efficient means of mastication would be of great importance, and its absence extremely detrimental to all but those exceptional individuals endowed with a vigorous digestion lasting unimpaired to the end of life.

[And what would Sir Henry do with the man who has preserved his natural "grinders?" Extract them to prevent his eating improper food?—ED. JOURNAL.]

NITROUS OXIDE IN PREGNANCY AND OLD AGE.

PREGNANT women, even as far advanced as eight months, take nitrous oxide well. I may here mention the case of two patients, who were suckling, and in whom the shock from the extraction of a tooth, without the gas, stopped the secretion of milk; subsequently having to undergo a similar operation, under like circumstances, they determined to take the gas, and in neither instance did any derangement of the function of lactation occur. Great age is no bar to the administration of nitrous oxide; my oldest patient, a lady, having reached the age of 94.—BRAINE in *Brit. Med. Journal*.

Editor's Specials.

"Write the Vision and make it plain."

ANCIENT ANÆSTHESIA.

OUR present reference is not to the rib removal in Eden, but the aim is to call attention to the fact that the anæsthetic powers of alcohol were well known probably at least ten centuries before the Christian era.

When a young physician, it was our lot to see a grave, and

ordinarily a very painful operation performed under the anæsthetic influence of whisky. The patient was so profoundly unconscious that he made not the slightest motion during the time, nor for an hour or more after the operation. Though a half dozen physicians were present, the facts elicited but little attention, as the patient was regarded simply as "dead drunk." And besides, the whisky had been given only to sustain his courage and keep up the heart's action. But as it is said that "too many cooks spoil the broth," too many assistants made out to surpass the intentions of the physicians in charge, in reference to the stimulant; for as each physician had his student with him, the young men, wishing to be useful, dosed him to the extent already mentioned.

But in the Proverbs of Solomon, 23, 35, the consumer of alcohol is represented as describing his condition, and saying, among other things, "They have beaten me, and I felt it not." The marginal translation says "knew it not;" but either translation implies complete anæsthesia. When a fact or principle passes into a proverb among any people, there is assurance that it is well and generally recognized. And it is an interesting fact in history that in all ages and countries, anæsthesia has been sought after as men seek for gems and gold. Its desirableness to a fallen, and consequently a diseased race, may in part, explain the diligence and perseverance of the search, and the hint from Eden may have acted as a stimulant in the same direction. And it is remarkable that anæsthesia, in its modern aspects, has been given to the world by the dental, and not by the medical profession. And even yet, both in its general and local applications and uses, it receives as much, if not more attention from dentists than from physicians. All facts can be explained, if the collateral facts are known; and may it not be that the dentists have given the subject special attention because they inflict severe pain more frequently than do physicians? And again, they have a better control of their time. The physician is disinclined to take up any new issue or investigation, because he is liable to interruption at all hours, while after office hours, the dentist can sit down to an experiment with reasonable hope of non-interruption. Some years ago we devoted our leisure time for two or three months to the investigation of the chemistry of the mouth, aided by the microscope. Beginning at each evening at 10 P. M., and continu-

ing till 2 A. M., but two or three interruptions interfered with the researches, whereas, had we been in general practice, they would have counted a dozen or a score. Giving these two facts due weight, it does not seem strange that this great boon was given to the world by the dentist, and not by the physician.

Though alcohol gives profound anæsthesia, it is doubtful if it is even as safe as chloroform. In early childhood, we saw a good boy dying from whisky with which he had been drugged by bad men.

OHIO STATE DENTAL SOCIETY.

REORGANIZED.

THE third State in the Union, as estimated by population and political power, cannot afford to have no regularly organized State society of dentists. Accordingly, when, for reasons at the time satisfactory to the members present, the late State Society disbanded, declaring itself non-existent, as many friends of the cause of associated effort as could be readily gotten together, met and took steps to reorganize, or to form a new society similar in name and proposed aims and efforts. Not all were present, nor was a full meeting as likely to secure the result sought. Time was precious, as nearly all were determined to leave the same night or early in the morning. A large meeting might have defeated the object through diversity of counsels. As it was, an organization was promptly formed, and steps were taken to have the new, or remodeled society incorporated, which we think was wise. Of course the power of the association now legally rests in the incorporators; but these are members of the dental profession, and its interests are theirs, consequently there is no probability of arbitrary or selfish measures being adopted. On the contrary, though a majority of them are men of long and large experience, they are ready and anxious to receive the advice and counsel of their brethren of the profession; and the call which they have issued, in giving official notice of the meeting indicates the reverse of exclusiveness. The new, or renewed society will be very decidedly what the profession makes it. If any stay away, and thus fail to give aid and counsel in the reorganization, they will have themselves to blame if the business

is not done to their satisfaction. It is hoped (but rather against hope) that such will not complain.

The proper thing to do is for each dentist in the State, who regards himself as an honorable member of the profession, to be on hand, with his neighboring practitioners along as companions, and with a carefully prepared essay in his pocket, on some practical subject with which he is familiar, the essay to be read after he has been received into membership, or given to the committee on volunteer essays, should there not be time to read it. By such a course carried out in good faith, the society can be made overwhelmingly good from the start. The official call for the meeting is here appended, and it speaks for itself:

The first annual meeting of the Ohio State Dental Society (as reorganized) will be held at Chillicothe commencing on the last Wednesday of October, 1885.

Efforts are being made to make this meeting of more than ordinary interest. Let every member assist, not only by his presence and a paper on some topic of interest, but by bringing with him some member of the profession whom he can recommend for membership.

The consideration of important legislation the coming winter will occupy some of the time of the session.

J. R. CALLAHAN,

Secretary, Hillsboro.

C. H. JAMES,

President, Cincinnati.

It is not the desire of any of the incorporators that those whose names are not found in the list shall regard themselves as outsiders. It would be strange if, in the years of the old Society's existence, the members had learned nothing. Each member should "know enough to know" that mistakes were made in the past, and that these should be avoided in the future.

The new society will have work to do from the start. Our present legislation is almost practically null. It is probable that new measures will be suggested. Many think the old society was too lax in the reception of members. Those who think so will probably try to have more rigid measures in the renewed association. But as said above, the incorporators will probably act according to the advice given by those desirable and desired as members. We hope that some of the brethren who have good heads, with leisure for them to act, who don't have to respond to the printers' call for "copy," will give some close thought toward the preparation of a constitution and by-laws. Much valuable time can be thus saved by judicious volunteer effort. Let

not the fear of being regarded as officious deter any one from such work.

Our fond hope is that the coming meeting may be the best ever held in the State; "and may we be there to see."

DOUBTFUL TEACHING.

As A journalist we feel free to criticise the published productions of our best friends—not the friends themselves. As friends they are sacred, and that is a strong reason for desiring to have them sound in doctrine. And our affection for them makes us quite unwilling to have them teach error.

With some of our best men there is sometimes found an unfortunate indulgence in platitudes and mystified utterances. Some even of the most distinguished brethren set the example, and a lot of dimly shining satellites try to shed forth similar rays of luminosity. (Simply to think of them stimulates a flow of big words.) Some of these brethren remind us of Burns's lawyer who

"Clenched his pamphlets in his fist,
He quoted and he hinted;
Till in a declamation mist
His argument, he tint* o't,
He gaped for 't, he gaped for 't,
He found it was awa' man;
But what his common sense cam' short,
He eked out wi' law, man."

* Lost it.

The counterparts of this in our profession may be recognized by such expressions as "All things differ but in degree," and "as much beyond as being is beyond existence," expressions which may mean something to the speaker, but convey no idea to the hearer.

And this disposition to indulge in platitudes and mystified sayings is not peculiar to dentists, but is found in all classes and professions. A wonderfully popular writer has said,—

"Not enjoyment and not sorrow
Is our destined end or way,
But to live that each to-morrow
Find us further than to-day."

That is, our destined end or way is neither enjoyment nor sorrow; but it is to so live that each succeeding day shall find us *further* than the day preceding. Further from the date of our birth? or toward the date of our death? Hardly; for we could not live otherwise. Further up? Further down? Hellward? or heavenward? Further in what direction? You tell!

Sometimes the doubtful teaching results from inadvertence in expression, in mistakes in transcribing, in typographical errors, etc. A case has occurred lately wherein one of our very best friends is represented as saying what we feel certain he does not mean. This is said, in print, but was probably not so thought: "The bacteria theory must now be considered an accepted fact, as the best practitioners are full of experimentations with their antiseptics, and that mode of practice presupposes the septic or putrefactive condition of disease; and it is an acknowledgement of the presence of bacteria." To which we say, far from it. Those who do not believe micro-organisms are the primary factors in disease, are quite as earnest in the use of antiseptics as any bacterian advocate can be. When chemical action is the primary agency, the call for antiseptics is all the louder.

In the same article we are told that "Chloric acid has thus far resisted every effort to decompose it. It is contained in the buccal fluids of the mouth, and manufactured from the salt contained in the food." Compare this with a clause further down: "Now, when the chlorine contained in the buccal fluids or manufactured from the salt, in combination with the acids in the mouth, comes in contact with *tin*, it is set free." But the preceding paragraph tells that the acid cannot be decomposed. How then can the chlorine be set free? It is evident that this is not what the writer was intending to say. And after all, is it not hydrochloric, instead of chloric acid that is found in the buccal fluids? Chloric acid is composed of one atom of chlorine united with five of oxygen. But it is well known that liberated chlorine generally takes hydrogen from water and similar compounds, forming the hydrochloric acid. And this is the acid usually formed by the decomposition of common salt, which is a chloride of sodium. It is so easy to be misrepresented by the types in chemical questions, that we are usually surprised if correctly reported. Hence we hold no one responsible for opinions that we find in print, when chemical questions are involved. Still it

is our duty as a journalist to try to neutralize any evils that may result from such errors. And some of these would have been noticed sooner, if not prevented from appearing, had we been in the enjoyment of our usual strength.

One of our most aged and experienced writers, while discussing the purification of our profession, has lately said: "We must discuss the merits of men as we would a problem in geometry." In like manner, in trying to purify our teachings, a journalist must discuss contributions to our literature.

PASTEURIZING.

THE *American Chemical Review* is high authority on the subject of fermentation. Like the boy with his necktie, it very nearly gives its whole mind to it. In an article in the number for August 1st, 1885, entitled as above, is found the following: "For canned goods, the practice of heating their contents to the boiling point before sealing them up has long been, and is still, in great favor, as it not only destroys the ferments necessary to induce decomposition, but also drives out the *air, the presence of which is always necessary in putrefactive fermentation.*"

The italicising is ours. The "ferments" to be destroyed by heat may be either chemical or organic, according to which is the correct theory of putrefaction. But the point most noticeable is the necessity of air. Why can not the germs, if organic, do the work without air? Simply because the action of oxygen is necessary to the beginning of the process. None deny the presence of organic micro-organisms in fermentation and putrefaction, but the disputation turns on the point of their relative influence in the process, as compared with chemical action. The micro-organic advocates exclude chemical action from their theory, if we understand them, while those holding to the chemical theory recognize the aid of the organisms as readily as they do the assistance of vultures, jackalls, and maggots in disposing of the carcasses of the dead. They claim, however, that chemical action is able to do the entire work, if allowed the requisite time.

These thoughts apply to action within the mouth, as well as out of it.

GENERAL GRANT

IS DEAD! Not killed in battle, nor dead from old age, but from disease. Painful, annoying, trying, hopeless disease.

A dental periodical is not the place to discuss his character. Our first sight of him was on the Shiloh battle-field. Four generals sat in consultation. We took down their names, and briefly recorded our estimate of their characters. Of the lately deceased we wrote, "Perseverance personified. Will do if strong enough to hold himself."

Had a novelist given to his hero the rapid changes and varied stations in life, as have been illustrated in the career of General Grant, his book would have been laid down in disgust, as the character would have been regarded as impossible. A hired servant (?) of his father, under the authority of a not always respectful and patient brother, at a salary that failed to feed and clothe his family, downhearted and discouraged, and known simply as "Grant's brother,"—and, in less than a year, a general in the army, soon the commander in chief of the largest army of the world, conducting to success the greatest war of history, a new military position created for him, twice president, again a private citizen, yet, on a journey around the world, lionized by kings, emperors, and potentates in general, a millionaire, a bankrupt, forcing death back to his pit, till, by writing and dictating the history of himself and the war, he snatches from poverty the prospective finances that shall support the wife of his youth, the mother of his children, in her coming widowhood. Nay! verily. No novelist would dare to ascribe such things to his hero.

Some characters can be criticised and some can not. Success is so successful that it sneers at criticism. It has been argued that the Mississippi river flows up hill. It flows; and we shall let it flow.

OBITUARY.

DR. I. FORBES—Died, July 15, 1885, of old age, at his residence, 3223 Chestnut street, St. Louis, ISAIAH FORBES, D. D. S., aged 75 years.

Such is the sad announcement brought from St. Louis a few days ago. "Of old age"! and yet but seventy-five years old. How many of us are within a decade of him?

Dr. F. was one of the men who stood manfully up for the good of our profession when he had not many of a similar spirit to encourage him. Our first acquaintance with him was formed at a meeting of the American Dental Convention, at Hope Chapel, New York, in 1856. Two years later he presided over the meeting of the Convention in Cincinnati. He was manly in his devotion to the profession of his choice. The St. Louis Dental Society very appropriately adopted the ordinary obituary resolutions, and attended his funeral.

MARRIED.

SHATTUCK—BUNO.—At Shelton, Neb., July 4, 1885, Dr. Frank L. Shattuck and Miss Jessie Buno.

OUR ARTICLES ON DYSPEPSIA.

AS PROBABLY no other constitutional disease tends so directly toward the destruction of the teeth as the above, we have felt that dentists should have a more extended and clearer knowledge of it than is common. On looking around we could find none more competent to discuss it than our good friend GALEN, who is not a stranger to the readers of the JOURNAL. At our earnest request he has kindly taken up the pen, which in his hands is a ready instrument. We hope no reader will fail to study the articles closely; and when they take all the phenomena of the disease into consideration, they will certainly see the necessity of watching the mouths of patients afflicted with this variegated disease. Youngish dyspeptic persons should have their teeth carefully inspected as often as once a month; and the only practical way of having them taught to do so is through the instruction given them by their dentists. When any work is done for such a patient, an engagement card should be given him, dated not more than a month forward, and with the card he should receive a kind warning as to the importance of his close attention, in co-

operating with his dentist. Of course after all this, he will be willing to pay for a careful inspection of his teeth, which should not be made without adequate compensation.

Societies.

"Wherewith one may edify another."

MEETINGS.

CENTRAL ILLINOIS DENTAL SOCIETY at Bloomington Oct. 13, 14 and 15. C. R. Taylor, Sec'y, Streator, Ill.

OHIO STATE DENTAL SOCIETY at Chillicothe Oct. 28, 29 and 30. J. R. Callahan, Sec'y, Hillsboro, O.

OHIO BOARD OF DENTAL EXAMINERS at Chillicothe Oct. 28, 29 and 30. F. H. Rehwinkel, Sec'y, Chillicothe, O.

AMERICAN DENTAL ASSOCIATION.

At the Minneapolis meeting, August 7th, the following officers were elected: President, W. C. Barrett, Buffalo, N. Y.; Vice-Presidents, L. C. Ingersoll, Keokuk, Ia., A. T. Smith, Minneapolis, Minn.; Secretary, A. W. Harlan, Chicago; Treasurer, Geo. W. Keely, Oxford, O.

The selection of the place for the next meeting was left to the Executive Committee.

SOUTH DAKOTA DENTAL SOCIETY.

THE second annual meeting of this society was held June 9, 10 and 11, 1885, at the Wright House, Huron, Dakota.

Among those present were Drs. C. W. Stutenroth, of Watertown; A. Sherman, E. E. Wightman, F. O. Sale, of Huron; W. H. Barker, of Miller; O. M. Huestis, of Aberdeen; W. B. Steere, of Pierre; W. H. H. Brown, of Yankton, and the following who were elected to membership at this meeting: S. J. Moore, E. B. Fuller, G. P. Dix, of Mitchell; L. F. Straight of Iroquois; C. E.

Brooks, of Webster; W. B. Walling, of Blunt; and, though not present, Dr. Moore of Brookings.

Papers were read on Preparing and Filling the Roots of Pulpless Teeth, by O. M. Huestis; Dental Lesions by W. H. Barker; The Oral Cavity by W. B. Steere. The discussions included Dental Prosthesis and the subjects covered by the papers.

The President Dr. C. W. Stutenroth read the annual address.

Clinics by Drs. Sale and Huestis at the office of Dr. Sale.

A resolution was introduced making the initiation fee and annual dues two dollars.

Dr. W. B. Steere, of Pierre, whose term as a member of the Board of Dental Examiners is about to expire was recommended to the Governor for reappointment.

The thanks of the society were tendered Hon. E. T. Hutchinson, a brother dentist, for his successful efforts in behalf of the passage of a law regulating the practice of dentistry in Dakota.

Drs. S. J. Moore, O. M. Huestis, and any other members who might attend, were appointed delegates to the American Dental Association, at Minneapolis.

The officers elected for the coming year were:

President, C. W. Stutenroth, Watertown; Vice President, S. J. Moore, Mitchell; Treasurer, O. M. Huestis, Aberdeen; Secretary, W. H. Barker, Miller; Librarian, G. P. Dix, Mitchell; Executive Committee, F. O. Sale, Huron; L. F. Straight, Iroquois; Committee on Ethics, W. H. H. Brown, Yankton; O. M. Huestis, Aberdeen; W. B. Walling, Blunt.

Adjourned to meet the second Tuesday in June, 1886, at Mitchell, Dakota.

UNIVERSITY OF CALIFORNIA—DENTAL DEPARTMENT.

THE third annual commencement was held November 11, 1884. The degree of D.D.S., was conferred on the following named persons:

George Washington Cool, California; John Michael Dunn, California; Archibald Duncan Gleaves, California; Robert Nicol, Scotland; Gustavus Carl Rietzke, Germany; William Henry Simmons, California; Elmer Joseph Weldon, California.

CENTRAL ILLINOIS DENTAL SOCIETY

WILL be held in Bloomington, Ill., on the second Tuesday in October, 1885, and continue three days. Visiting brethren are cordially invited to be present.

C. R. TAYLOR, Sec'y,
Streator, Ill.

J. D. MOODY, Pres't,
Mendota.

DELAWARE DENTAL LAW.

Be it enacted by the Senate and House of Representatives of the State of Delaware in General Assembly met :

SECTION 1. That it shall be unlawful for any person who is not, at the time of the passage of this act, a recognized practitioner of dentistry in this State, and so recognized by the profession, to practice dentistry, unless he or she shall have obtained a certificate as hereinafter provided, or shall hold a diploma from a reputable dental college, and so recognized by the board of examiners herein created.

SEC. 2. That a board of examiners, to consist of five reputable practicing dentists, is hereby created, whose duty it shall be to carry out the purposes and enforce the provisions of this act; the members of said board shall be appointed by the Governor, who shall select them from the dentists residing in the State. The term for which the members of said board shall hold their offices shall be for four years, except that two members of the board first to be appointed under this act, shall be designated by the Governor to hold their offices for the term of two and three and four years, respectively, unless sooner removed by the Governor, and until their successors shall be duly appointed; in a case of vacancy occurring in such board, such vacancy shall be filled in like manner by the Governor.

SEC. 3. That said board shall choose one of its members president and one secretary thereof; it shall fix the time and place of its meeting or meetings; a majority of said board shall at all times constitute a quorum, and the proceedings thereof shall at all reasonable times be open to public inspection; the board shall also make an annual report of its proceedings to the Governor.

SEC. 4. That within six months from the time this act takes effect it shall be the duty of every person who is at that time engaged in the practice of dentistry in this State to cause his or her name and residence or place of business to be registered with said board of examiners, who shall keep a book for that purpose; the statement of every such person shall be verified under oath before a notary public or justice of the peace, in such a manner as may be prescribed by the said board of examiners; every person who shall so register with said board as a practitioner of dentistry may continue to practice the same as such, and shall receive a certificate of such registration upon his or her paying the said board one dollar for such certificate.

SEC. 5. That any and all persons who shall desire to commence such practice "after the passage of this act" shall appear before said board at any of its regular meetings, and be examined with reference to their knowledge and skill in dental surgery, and if the examination of any such person or persons shall prove satisfactory to said board, the board of examiners shall issue to such persons as they shall find to possess the requisite qualifications a certificate to that effect, in accordance with the provisions of this act, upon the payment of one dollar for such certificate; all certificates issued by said board shall be signed by its officers, and such certificates and diplomas, granted as aforesaid, shall be *prima facie* evidence of the right of the holder to practice dentistry in the State of Delaware.

SEC. 6. That any person who shall wilfully violate any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof, in any court having criminal jurisdiction, may be fined not less than fifty dollars nor more than three hundred, or be confined not more than six months in the county jail, in the discretion of the court; all fines received under this act shall be paid into the common school fund of the city or county in which such conviction takes place.

SEC. 7. That the board of examiners shall meet within thirty days after appointment, and frame by-laws governing the board, and any person or persons desiring to be examined by the board of examiners for a certificate to practice dentistry in this State shall give notice of such desire to the secretary of said board, who shall notify the members thereof, and they shall, within fifteen (15) days from the receipt of such notice, meet to examine such person or persons, and give him, her, or them proper notice of such meeting.

SEC. 8. That nothing in this act shall be so construed as to interfere with the rights and privileges of physicians and surgeons in the discharge of their professional duties.

SEC. 9. That this act shall take effect from the date of its passage.

Passed March 31, 1885.

The Governor, on the 25th of April, appointed the following to constitute the Board of Examiners: Drs. T. H. Gilpin, Middletown; C. R. Jeffries, Wilmington; C. H. S. Littleton, Milford; E. Lewis, Dover, and C. Porter.

UNIVERSITY OF PENNSYLVANIA—DEPARTMENT OF DENTISTRY.

THE annual commencement was held May 1st. The degree of D.D.S. was conferred upon the following:

William Y. Allen, Massachusetts; Edgar C. Baily, Georgia; Edward R. Bellis, Indiana; F. W. Bromley, M. D., Wisconsin; Augustus Bruns, Germany; Ditson P. Carter, Ohio; William S. Couto, Brazil; Ira B. Crissman, Illinois; Charles Elmer Dayton, Connecticut; George W. C. Dick, South Carolina; Edward B. Dickinson, Massachusetts; Robert Fulton Elmi, Ohio; George Egidius Englert, New Jersey; George W. Erskine, Pennsylvania; Oswald Fergus, Scotland; Frank W. Fisher, New York; Andreas Fridman,

Sweden; Clifford Gibbens, England; John F. Gibbons, England; Louis Ginoyer, Brazil; Thaddeus T. Hayward, Minnesota; John C. Hertz, Pennsylvania; Edward D. Howe, New Hampshire; A. C. Hugenschmidt, France; L. Foster Jack, M. D., Pennsylvania; Victor S. Jones, Pennsylvania; Frank C. Knapp, New York; William R. Long, Pennsylvania; Adelbert W. Marsh, New York; Charles J. Mercer, Pennsylvania; George G. Milliken, Pennsylvania; Charles T. Milliken, California; Grafton Munroe, Maryland; Edwin G. Parker, New York; Edwin Peardon, Wisconsin; Clarence F. Roett, Barbadoes, W. I.; Jos. Roque, Cuba; George B. Ryan, Canada; John A. Schmidt, New York; Louis Shaw, Pennsylvania; Charles Elmer Smith, Iowa; W. Albert Smith, Colorado; Claude A. Southwell, Wisconsin; Ernest L. Southworth, California; J. Walter Stapleton, Kentucky; R. Walter Starr, Pennsylvania; Henry M. Stine, Pennsylvania; George H. Wells, Massachusetts; William L. Winner, Pennsylvania.

Matriculates, one hundred and twelve. Graduates, forty-nine.

NATIONAL UNIVERSITY—DENTAL DEPARTMENT.

THE first annual commencement was held in Washington, D. C., May 22. The degree of D.D.S. was conferred on the following persons:

Edwin Howard, District of Columbia; C. M. Kennedy, District of Columbia; L. A. Brown, West Virginia; G. W. Egleston, New York.

DENTAL DEPARTMENT HARVARD UNIVERSITY

JUNE 24, 1885, at the annual commencement, the degree of D.M.D. was conferred on eight persons, as follows:

Charles Henry Abbott, Edward Merrill Currier, M.D., Charles Eugene Estabrook, Thomas James Giblin, Henry Webster Gillett, Walter Harrison, L.D.S., William Henry Potter, A.B., James Sheperd.

UNIVERSITY OF MICHIGAN—DENTAL COLLEGE.

AT the tenth annual commencement, held June 25th, the degree of D.D.S. was conferred upon the following:

Lafayette Lyman Barber, Ohio; William H. Bailey, Indiana; Louis P. Bethel, Ohio; Marian J. Coy, Ohio; Homer A. Drake, Michigan; John L. Gish, Indiana; Elijah J. Galbraith, Jr., Ohio; Fred S. Hadley, Wisconsin; Elisie A. Hallock, Michigan; George B. Haught, Ohio; Daniel S. Husted, Ohio; Charles W. Jones, Wisconsin; Leo Kratzsch, Wisconsin; Herman C. Kuebler, Ohio; Oscar B. Lundy, Michigan; Clara W. McNaughton, Michigan; Hervey C. Merrill, Germany; Charles A. Murray, New Brunswick;

Robert Nicol, Scotland; William Morris Peck, Michigan; Edward Fitz Randolph, Ohio; Frank W. Ryan, New Brunswick; John Duncan Robertson, Michigan; Willoughby B. Smith, Michigan; May C. Smith, Illinois; Isaac A. Stitt, Indiana; Robert F. Taggart, Michigan; Will H. Whistlar, Ohio.

Matriculates, eighty-two. Graduates, twenty-eight.

Books and Pamphlets.

WE have received annual catalogues from the following dental schools for 1885-6:

BALTIMORE COLLEGE OF DENTAL SURGERY. 46th year, Oct. to March. Dr. R. B. WINDER, Dean. Total number of students, 2166; total number of graduates, 1238.

OHIO COLLEGE OF DENTAL SURGERY, Cincinnati. 40th year, Oct. to March. Dr. H. A. SMITH, Dean. The revised list contains the names of about 600 graduates.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY, Philadelphia. 30th year, Oct. to March. Dr. C. N. PEIRCE, Dean. Number of graduates from 1856 to 1885, 1095.

PHILADELPHIA DENTAL COLLEGE. 23d year, Oct. to March. Dr. J. E. GARRETSON, Dean.

BOSTON DENTAL COLLEGE. 19th year, Oct. to June. Dr. J. A. FOLLETT, Dean.

INDIANA DENTAL COLLEGE. 7th year, Oct. to March. Dr. J. E. CRAVENS, Sec'y, Indianapolis, Ind.

KANSAS CITY DENTAL COLLEGE (Dental Department Kansas City Medical College). 5th year, Sept. to March. Dr. J. D. PATTERSON, Sec'y.

CHICAGO COLLEGE OF DENTAL SURGERY. 4th year, Oct. to March. Dr. T. W. BROPHY, Sec'y.

UNIVERSITY OF MARYLAND DENTAL DEPARTMENT. 4th year, Oct. to March. Dr. F. J. S. GORGAS, Dean, Baltimore, Md.

Our Aftermath.

FISH DENTISTRY.—The gist of a story told by Seth Green in the *American Angler*, is contained in the following: "Chancing to glance at the fish in an aquarium in the window of a confectionery establishment in Rochester, N. Y., I noticed that all the fish but one bore scars of conflict. The fish were California and brook trout, and the injuries were inflicted by one of the former. It seems that one of the trout was of a sour, quarrelsome disposition, and had been in the habit of worrying the others persistently. I suggested the

removal of the offending trout, as we are occasionally troubled by such fellows among the trout in the Caledonia fish ponds, and the usual remedy is to spear and make an end of the would-be destroyer of his fellow-companions. One of these quarrelsome trout would otherwise wound and cause the death of a large number of others. But the proprietor objected to adopting the remedy suggested, and trouble continued to exist in the aquarium. I revisited the establishment a day or two subsequently. Procuring a pair of pinchers, I took the big trout from the water and extracted its teeth, and those that could not be drawn, I cut down with a knife, exercising as much care as possible, so as not to injure the fish by handling. The offending fish, although apparently none the worse for the operation, ceased to attack his companions. I will say that the teeth of trout are not used for the mastication of food, but are intended to aid the fish in maintaining hold of its prey. Trout in ponds and aquariums have therefore no actual need of teeth, for the reason that they are not obliged to seek their own food. The experiment I expected would result in the death of the fish, but I was happily disappointed."

CHLOROFORM AND ETHER.—Like all pupils of Simpson, I began my professional life with a most profound belief in the advantages of chloroform over all other anesthetics. I have never seen an accident from chloroform, but partly by reason of the fear of inquests and partly by the example and teaching of Dr. Keith, a belief grew in my mind that ether was preferable to chloroform, and at first I had the impression that the sickness after ether was less marked than after the use of its rivals. I was not, however, very long in discovering that ether has special risks for people with a tendency to bronchitis; and later on I discovered, and have already published the fact that during the administration of ether the secretion of urine is completely arrested. It was subsequently very forcibly impressed on me that for patients with damaged kidneys ether is a dangerous anæsthetic, and although I cannot say that I have seen any fatal results arising from this peculiarity of its action, I certainly have had abundant cause to fear it. My first alteration, therefore, in my views concerning ether was to limit its application to patients under forty, but even after this I found my confidence in its safety greatly diminished by the fatal occurrence of bronchitis in a case of hysterectomy in a woman aged thirty. In this case the patient's breathing was embarrassed from the moment she recovered from the anæsthetic, her urine was scanty and became ultimately albuminous, and she died on the fourth day from suffocative catarrh, the post-mortem showing that so far as the operation was concerned everything was perfectly satisfactory. The last stage of my experience in the employment of anæsthetics is the use of a mixture of two parts of ether and one part of chloroform, given by means of Clover's apparatus. This mixture is rapid in its action, is not at all unpleasant to the patient, and certainly the sickness after it is far less than with anything else I have ever used. I cannot say that I think it more safe than any other anæsthetic, for we may be quite certain that with none of these drugs will there ever be absolute security against accidents, but I have seen no bronchitis after its use; it has no effect in arresting the secretion of urine, and, on the whole, I am far better pleased with it than any other.—LAWSON TAIT in *Medical Record*.

CHLOROFORMING.—Mr. Osborn, the chloroformist to St. Thomas' Hospital, London, makes the following points which are important enough to bear frequent quotation:

Dilatation of the pupils is a sign that the anæsthetic has been pushed far enough, and its administration should be discontinued.

Flaccidity of the limbs is no sign of cutaneous insensibility.

The inhalation of ether may produce exanthematous patches on the face and thorax. Cases have been removed from the operating table under the impression that an outbreak of an eruptive fever had begun, and that the case was unfit for operation.

The origin of this phenomenon is to be found in paralysis of the vasomotor nerves. Moreover, if genuine skin eruption be present, it is by the same cause made more prominent.

A false impression may be conveyed when feeling the pulse, where the patient, lying upon the arm, compresses the main artery.

Chloroform is better for all operations about the mouth, staphylorraphy, excision of tongue, etc., since ether not only excites the flow of saliva and increases vascularity, but the mouth being open, they return sooner to consciousness.—*New Eng. Med. Mo.*

COMMERCIAL DISINFECTANTS TESTED.—In the *Sanitarian* for March, is an extract from the report of Maj. Geo. M. Sternberg, Surgeon U. S. Army, of the Committee on Disinfectants, of the American Public Health Association.

The Committee defines a disinfectant: *An agent capable of destroying the infective power of infectious material*, and in testing used "broken down" beef tea containing spores of *bacillus subtilis* and *bacillus anthracis*:

NAME UPON LABEL.	Per cent. in which active.	Per cent. in which failed.
Little's Soluble Phenile, - - - -	2	1
Labarraque's Solution, - - - -	7	5
Liqr. Zinci Chloridi (Squibb's) - - - -	10	7
Feuchtwanger's Disinfectant, - - - -	10	8
Phenol-Sodique (Hance Bro's & White,) - - - -	15	10
Platt's Chlorides, - - - -	20	15
Girondin Disinfectant, - - - -	25	15
Williamson's Sanitary Fluid, - - - -	25	20
Bromo-Chloralum, - - - -	25	20
Squibb's Solution of Impure Carbolic acid (about 2 per ct.)		50
Burchard's Disinfectant, - - - -		50
Phenol-sodique (Bobceff's), - - - -		50
Listerine, - - - -		50

WHITE TEETH.—There are no such things as white teeth, as can be proved by contrasting those called white with snow, raw cotton or marble. Roughly, teeth can be divided, as regards color, into blue, gray and yellow, with hundreds of different shades. The apparent whiteness is due to the complexion and hue of the lips; and the "glistening ivories" of the negro

are, as a rule, so exceedingly yellow that they would disfigure a white person. It is the black skin, hair and eyes that make them look white.

When the writer of the above penned the first line he evidently had forgotten the sets of store-teeth to be met with in the mouths of victims everywhere.

STARCH-FED INFANTS.—In view of the difference of opinion among certain clinical teachers of children's diseases as regards the admissibility of starchy food to infants, the following conclusions from the examinations, by Drs. Randolph and Dixon, of the feces of starch-fed children are especially interesting: 1. "Many infants under three months can digest starchy food; 2. That the individual variations in this regard are so numerous that no broad and general statement can be made as to the period at which infants begin to digest starches; and 3. That the physician can be absolutely certain that a farinaceous ingredient in the diet of a young infant is beneficial only by an examination of the dejecta under such diet."—*Notes from the Physiological Laboratory of the University of Pennsylvania.*

NEURALGIA—BISULPHIDE OF CARBON.—The *Union Medicale* contains the following suggestion with regard to "pure neuralgia" (*neuralgie pure*) not due to any local cause: pour ten or fifteen drops of bisulphide of carbon upon a bit of cotton and apply it directly to the seat of pain, care being taken that the liquid does not evaporate too quickly. A feeling of warmth is first experienced, and then a slight painful sensation, which vanishes as soon as the cotton is removed. The relief is said to be immediate, and no local lesions are observed, except a temporary redness of the skin.—*N. Y. Medical Journal (The Analectic.)*

ANTISEPTIC WASH FOR THE HANDS.—Dr. Förster, of Amsterdam, (in the *Centralblatt für klinische Med.*), after a series of careful experiments decides that a solution of corrosive sublimate of 1 to 2000 forms a reliable antiseptic wash and urges its adoption by physicians and surgeons.—*N. Y. Med. Journal.*

EYE TEETH.—Professor at Columbia: "One can not taste in the dark. Nature intends us to see our food." Student: "How about a blind man's dinner?" Professor: "Nature has provided him with eye teeth, sir."

COPPER AND LEAD IN FOOD.—A. Gautier shows that copper is little calculated to produce mortal results. The solubility of most of its salts, their marked color, nauseating taste, and emetic action give at once warning. The salts of lead, on the contrary, have no pronounced taste, or are even sweetish. They are in general colorless. If introduced into the system, there is no alarming effect until the nervous centers, the liver, and the blood have become interpenetrated with the poison.

TO USE WATT'S NEW METAL.

It may be cast as Reese's, Weston's and other alloys, or as follows :

Secure a smooth model of plaster of paris 2 parts and spanish whiting or pulverized soapstone 1 part, thoroughly mixed before adding water. Do not oil the impression from which model is taken—use collodion, powdered soapstone or Elliot's parting fluid.

Use teeth intended for rubber or celluloid. If gum sections grind square joints.

Pink paraffine and wax make the best pattern. It should be made as the plate is intended to be when finished. Smooth the surface by flowing over a small flame, or with the blow-pipe. If sufficient care is taken in making the pattern, the plate will not need trimming except at the edges.

Invest the model in the half of Watt's flask having guide pins, placing the posterior part of the pattern toward the necks of the flask, leaving only the teeth and pattern exposed.

Plaster of paris 2 parts and fine lake sand 1 part make a quickly drying investment. Dust the surface with powdered soapstone, add upper half of flask and fill, being careful to avoid air bubbles. When the mold has hardened, warm slightly, but not sufficient to melt the wax, separate the parts and carefully remove the wax. Cut grooves in the plaster from the necks of the flask to the heels of the model, one to admit the metal, the other for the escape of air. Dry until moisture will not condense on a mouth mirror placed over the vents. While the mold is still warm pour the metal gently. Don't heat the metal very hot, and use the melting ladle for nothing else. When nearly cold place the flask in warm water for a few minutes, remove the plate, cut off the surplus metal with a fine saw and finish in the usual way.

To mend. Cut away metal enough to let the new tooth or block go in place. Touch the margins with chloride of zinc. Invest as for a new piece and pour. Or, when the break is very slight, some mend with the blowpipe, using beeswax as a flux, with the metal as a solder.

Most beautiful work may be made by combining it with rubber or celluloid, when there would be too much weight in using the metal alone. Make a mold and cast a thin plate, with slight projections to retain the rubber, or small holes may be drilled through the plate for the same purpose. The plate can be tried in the mouth and filed down if necessary till the muscles fail to displace it. Now fit the teeth, attaching them to the plate with adhesive wax. Mold and finish as if all were rubber.

OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. V.

OCTOBER 1, 1885.

No. 10.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

REPLANTATION OF TEETH AS A CURE FOR ALVEOLAR ABSCESS.

BY A. W. HARLAN, M.D., D.D.S., CHICAGO, ILL.

ON page 412 of your JOURNAL for September I find an article by Dr. C. S. Philips, of Texas, entitled "Replantation of Teeth." I desire a little space to review the article, and also to utter a word of warning concerning such practice. The writer says: "I believe for the four superior and inferior molars, where they have abscesses and they are to be filled, that the best and most satisfactory (sic) to both dentist and patient is to extract the tooth, fill and replace again. There is less danger of an abscess [recurring?] and I have more confidence that I have filled the nerve [pulp] canal." The author of the above extract either has but few such teeth to fill, or the day is not far distant when a large number of replanted teeth will have to be extracted for keeps. I, too, have had some experience in replanting teeth, and I cannot say that it has been altogether a satisfactory experience. I have replanted incisors, bicuspid and molars, and have seen teeth

that were replanted by other operators, and my observations lead me to the conclusion that more than half of the total number replanted, in from three to five years, loosen and must be extracted, or they drop from their sockets. Replanted teeth are attacked, either by a fungus or a soluble ferment, which gradually but slowly causes an absorption of the root, generally beginning on the side, more rarely at the apex. Any one who has observed closely will affirm what is here written. The little excavations which are seen on the roots of such teeth are not symmetrical, but, on the contrary, are very irregular. Occasionally the roots appear to have diminished in size from their apices two-thirds of their length, and in consequence of such wasting or absorption, the alveolo-dental membrane has become detached, the tooth becomes painful to touch, loosens and must be extracted. For the above reason I consider it unwise to extract and replant a tooth for the cure of an abscess, unless as a last resort. It is not certain that an upper molar tooth can always be extracted without danger of fracturing one of the roots, especially if it be thin or crooked. This is another reason for avoiding such practice. The gentleman who advocates replanting for the cure of abscess does not stop there, but also urges its adaptability in cases where the pulp is still living. I am at a loss to understand how he can foretell that the roots of a living molar tooth, either upper or lower, are small and crooked in their interior or exterior, unless he has gained pretty free access to the pulp chamber, previous to extracting the tooth. He does not say that he devitalizes the living pulp previous to extracting the tooth.

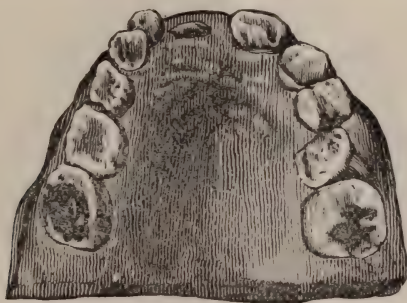
The filing of a groove perpendicularly on the root of a tooth before replacing it, is unjustifiable from a scientific, surgical or mechanical standpoint, and cannot be too strongly condemned. The reasons for not doing so must be obvious. The object in bathing the peridental membrane in a *mixture* of fifty per cent. carbolic acid and water is not easily comprehended, when a five per cent. solution would be equally efficacious. It is no argument in favor of replanting teeth that the doctor has lost many such cases by filling the roots in the mouth; it is rather a confession of imperfectly opened pulp chambers, failure to remove the pulp from the roots, inadequate treatment of cases where the pulp has long been putrescent, too much aimless drilling in the canals, and imperfect filling of the roots. No one questions the

greater ease with which a root may be filled when the tooth is held between the fingers ; but every surgeon recognizes the fact that ease to the operator does not always mean that to make such an operation is best for the patient. I venture to say that the above and many other reasons will cause the reflective reader to pause before he adopts such a practice for the cure of alveolar abscess, or for its prevention.

A CASE IN PRACTICE.

BY GEORGE W. KEELY, D.D.S., OXFORD, OHIO.

THE following case is that of a Miss, aged seven years and one month. Both arches are considerably contracted, though father and mother have normal arches. The child is delicate, but as well developed as is usual for one of her age. Cut No. 1 (looking into the roof of the mouth), shows the condition of her teeth.



No. 1.

The left permanent central is partly developed, and is close to the temporary cuspid. The right one is just appearing. The temporary centrals were not removed until the left permanent one was being erupted. This caused both permanent centrals to incline inward, which often causes them to be locked inside of the inferior teeth.

Here we find the permanent molars almost wholly demoralized, with exposed pulps. We do not claim that this is a rare case. On the other hand, such cases are often seen in the practice of every dentist.

We all recognize the *fact* that the first permanent molars play a conspicuous part in preserving the contour of the features, and also in masticating the food. It is a wise provision of nature that furnishes these teeth for active service during the time the temporary are lost and being replaced by the permanent ones.

It is a question of great importance to *know* the best thing to do with very badly decayed *first molars*, in the mouths of our little patients. In this case the teeth were soft and chalky; and *any attempt to save them permanently*, would have *proved a failure*. These molars were decayed and broken down. *More* than is shown in the cut.

To take a delicate child seven years of age, and attempt to put crowns on such molars, would be a task inflicting great pain on the little one, and, in a short time, proving a *disastrous failure*.

In this case we have advised the early extraction of all four. The right inferior one was removed (badly abscessed) just after this model was taken.



No. 2.

In cut No. 2 is a representation of the inferior arch. The four temporary incisors are gone, and the centrals are just appearing considerably twisted, with but little room between them and the temporary cuspids.

The removal of all four of these molars will cause the second ones to be erupted earlier, and they will come forward, taking part of the space left by the first molars; and, as we have stated before, when the third molars appear, they will have ample room and consequently will be better developed; and there will be *no tilting*, and the antagonism will be perfect.

Our hope for promoting the cause and management of irregularities of the teeth, are centered in the young men of the dental

profession. You can't teach old chaps new tricks, for the reason they are quite too often "joined to their idols."

It has been our rule for twenty-five years, where we found it absolutely necessary to remove first molars for our little patients, to take models, and we have been a close observer of the results.

When necessary to remove all four, and a crowded condition is indicated, all the permanent teeth will fall into line, and, at the age of twenty, the patient will not realize the loss.

When the two inferior molars are removed, and the superior ones remain, the anterior inferior teeth, as a rule, will fall back, leaving so large a space that the features are distorted, and enunciation and articulation are seriously interfered with. We cordially invite any "doubting Thomas" to visit us and see our collection of molars. We will show him a beautiful little city, (an educational center), give him the best rations we have, a comfortable bed to snooze in, and what is better still, a generous welcome.

AMERICAN DENTAL ASSOCIATION.

(Continued from September.)

EVENING SESSION.

THE meeting was called to order by President CROUSE, at 8 o'clock.

The minutes were read and approved.

Miscellaneous business being finished, the report of section V, HISTOLOGY AND MICROSCOPY was heard.

DR. ABBOTT, (N. Y.) read a paper on "The Pathology of the enamel of Human Teeth, with Reference to the Etiology of Caries."

He spoke of Strictor's new stereoptican that would magnify twelve thousand diameters. By means of this wonderful instrument, the minutest specimens are plainly visible on the screen; the red blood corpuscle is brought out so distinctly no possible mistake can be made as to its contents, etc. Within a few weeks the instrument will arrive in America, and it promises wonderful aid to dental investigation.

Beginning the subject he said:

The pathology and etiology of dental caries is one of the most important subjects in dentistry. It is well known that there is a great dissimilarity in different races and individuals, in regard to the decay of the teeth. It is a fact that with the advancing refinement of people, decay of the teeth becomes more prevalent. It seems, however, that this will not wholly explain the rapidly growing tendency toward this disease under all circumstances, and there is some anatomical substratum to fully explain the liabilities to caries in each individual, aside from acquired local causes to which caries has been attributed.

Strong, healthy individuals, after transportation from a country, or life of simple habits, to America, to live in luxury, find their teeth decaying more rapidly.

The results of many observations on this subject have been very satisfactory, and show that the tendency of teeth to decay, is directly due to imperfections in the anatomical structure.

The minute pits in the enamel are among the most important things in the etiology of caries.

Ailments of the mother and child may cause anomalies.

The reader then spoke of dentine in disease, the stratification, granulation and pigmentation of enamel, stating that all pigments of the body were the same as coloring matter of the blood, and that pigmentation was congenital, invading the temporary teeth, as well as the permanent, the brown discoloration being congenital, the orange acquired, and the red artificial.

Diagrams were used by Dr. Abbott in the description, and many specimens were shown under the microscope.

DISCUSSION.

DR. ATKINSON, (N. Y.): When we speak of etiology we must go behind all indications of decay. In speaking of the defective structure, it is not due to defective lime salts in the system, but it is the difference in their consolidation that constitutes the enamel and dentine.

DR. THOMPSON, (Kan.) asked Dr. Abbott about the chalky appearance of enamel.

DR. ABBOTT, (N. Y.): The only evidence that the lime salts are less, is shown under the microscope; and in some there is greater quantity than in the normal.

DR. BROPHY, (Ill.): Are defects always congenital?

DR. ABBOTT, (N. Y.): By observation of Black, Eames, and others, defects may occur as a result of absorption, as in the deciduous teeth, and by the same agent. I do not see how this can occur though, and do not believe it does.

DR. KEEFE, (Mo.) said he inserted a regulating plate in a girl's mouth, and it covered one deciduous tooth; and upon removal of the plate, he found the dentine of that tooth absorbed away, but none of the enamel gone.

DR. ATKINSON, (N. Y.) said that the enamel cells were absorbed by retrograde metamorphosis.

DR. INGERSOLL, (Ia.) next read a paper on

THE ALVEOLO-DENTAL MEMBRANE.

He said, there could be no health or vigor to a tooth unless this membrane was present. The pulp of the tooth might die, and the crown be wasted away; yet, if the membrane existed, a new crown could be built on; but if the membrane failed, the tooth would be lost.

He said very little had been written on the subject; and authors seemed to ignore it's belonging to the dental tissues; yet it did. He made reference to the origin of the membrane (Tomes page 102), and gave the histology of the development of the tooth, membrane and alveolar wall, inquiring if the membrane was single or double. (Reference: Tomes, page 101.) The proof he gave of its being double was, that if a tooth be extracted, it would be found that the root was covered, also the wall of the alveolus was lined with this membrane. That if the periosteal covering of the process was removed with the tooth, necrosis nearly always set in.

When excementosis was observed on two roots, he found that

First,—The membrane was not identical with the periosteum.

Second,—That the two layers were not of the same origin.

One was from the osseous system, and the other from the dental follicles.

Third,—That the one organ caused the formation of bone, and the other the formation of cementum. (?)

Fourth,—That the nervous and vascular supply was different.

Fifth,—That pathology points to the same facts.

Adjourned.

THIRD DAY—MORNING SESSION.

Pres. J. N. CROUSE called the meeting to order at 9:30.

The minutes of the preceding session were read and approved.

Under miscellaneous business, Secretary Cushing read a letter of resignation, from Geo. A. Mills, which, by motion, was accepted.

By motion, two hundred dollars each, were appropriated for the original investigations and work of sections V, VI, and VII, during the coming year.

The subject of Operative Dentistry was again taken up and remarks, on crowns and bridge work, were made by Drs. Kulp, Brown and Stockton.

Regarding the Herbst method of filling:

E. PARMELY BROWN, (N. Y.) said that the Herbst method may be good in Germany, but it is not the best here. It takes us back to the old fashioned hand work, where they gutted out the inside of a tooth, taking away much sound dentine; but today, cavities are prepared in such a way that very little good dentine is sacrificed.

DR. PATTERSON, (Mo.) thought it was best not to confine ourselves to one method, but to use our own thought and ingenuity in connection.

DR. BARRETT, (N. Y.): Three methods of filling have been employed. The first that of filling with soft, non-cohesive foil, which was wedged into the cavity; and by which means some beautiful work had been done, but no contouring. The next was the using of cohesive foil. Retaining pits or grooves were required, but the gold could be built out to any contour necessary, yet more care had to be exercised in the second method, for, with the cohesive, the pieces of gold would not slide, one on the other, which was the case with non-cohesive foil. The third method was the Herbst. Better adaptation could be gotten to the walls of the cavity, but it was not as solidly condensed, yet there were certain effects produced by this method that could not be got by any other. He thought the dentist, to become a good and scientific operator, would have to understand all three methods.

DR. BROWN, (N. Y.): Whenever gold is put into teeth, it should be put in solid. I do not believe an operator can get the gold into angles or pits by means of the Herbst method. I have

several times challenged the Herbst men, but they wanted to fill glass tubes, and that is not the kind of business I am doing.

DR. RYAN, (N. Y.) has found it impossible to make a perfect filling by the Herbst method, except by the use of Wolrab's gold. It was soft non-cohesive in the bottle, but thoroughly cohesive when burnished in the cavity. Preparing the cavities was not different from the Webb method, only retaining pits and grooves were not needed. The whole secret was the adaptation of matrices, and especially to the anterior teeth. He thought that even though not as much gold could be condensed in the cavity, so long as it was well adapted to the enamel borders, and the cavity hermetically sealed, that was sufficient.

DR. INGERSOLL, (Ia.) thought that when the surfaces came together they were held in contact by atmospheric pressure. He said that when an instrument was applied, electrical attraction was the cause of the gold adhering to the burnisher, and likewise one piece of gold to another, which showed how contour work might be made, even with non-cohesive foil.

DR. ATKINSON, (N. Y.) said he used gold made with platinum and iridium. It made a harder surface for mastication, and wore better than any gold he had ever seen. He used it as heavy as 120, but preferred No. 60. This alloy coheres to the ordinary gold, and more nearly corresponds with the color of the teeth. In preparing it he took hard platinum, of No. 24 gauge, and laid a piece of rolled gold foil on the surface; then with a sharp pointed instrument, he tacked them together so that the metal could be rolled in the mill; after which it was ready to be cut into strips, annealed, and applied to the cavity.

DR. ALLPORT, (Ill.): Hardness of filling. enough to resist masticating, is indispensable, but farther than this is an injury to the tooth, and absolutely unnecessary. The difference between cohesive and non-cohesive foil is that the non-cohesive slides on the surface, and permits perfect filling, free from the clogging that so often occurs in the use of cohesive foil. In filling, we want to use a material that will spread well, as does the gold used for the Herbst method. It is the material we want, and not the method. The Herbst method will not do for every day practical work; and he who adopts this method entirely, will, after a few years get the reputation of being a very poor operator.

DR. BROPHY, (Ill.): In regard to the difference in gold foil,

I see none. If I want non-cohesive foil, I take cohesive and subject it to the fumes of ammonia and it becomes non-cohesive. The non-cohesive has something on the surface to prevent cohesion.

DR. THOMAS, (Mich.): The man that confines himself to one method is a slave, and can never make a successful operator. I believe there is more danger from over-operating than from under-operating. Regarding matrices, the young men would better wait until they can operate successfully without them, before using.

DR. MCKELLOPS, (Mo.): There is not an instrument of more benefit than Dr. Jack's matrix, and every young man should be taught to use it. I have tried iridium gold foil, but it is too stiff. Platinum gold, No. 60, is easily worked, and is the best preparation used, for hardness. It is made in three shades, so that the color nearly matches the tooth.

DR. ABBOTT, (N. Y.) displayed some new instruments with which you could fill undercuts by the Herbst method. He demonstrated that rubbing without annealing was of no use, and did not think contouring by the Herbst method would ever be a success.

DR. MORGAN, (Tenn.): In regard to the medication and preparation of root canals before applying crowns unless the root is healthy, serious trouble is liable to occur and failure is almost sure. I have seen cases where the crown has been torn off, and an artificial crown immediately applied to the root. From such cases abscess, inflammation, necrosis, etc., are liable to follow.

DR. TAFT, (O.): The method of introducing gold does not stand alone in character. In 1860 cavities were lined by smooth pointed instruments, with non-cohesive foil, and the central portions were then filled with cohesive foil. The advantage claimed was the better adaptation of the gold to the walls of the cavities. A gentleman said that young men should be well instructed in the use of the matrix. This is not good advice. When you use a matrix it makes a simple cavity; and there are particular points to be observed that are not present in simple cavities, as the cervical and also the lateral borders all the way up; and when the matrix is applied to the cavity, it is almost impossible to observe these. I would not advise the student to use the matrix when he can do without it. A free play of instruments is necessary. Again, the margins may not be straight, and thus imperfect

adaptation of the matrix may occur, and this interferes. Too often gold is stuffed into cavities in a reckless manner.

DR. HORTON, (O.) thought that by taking bridge work, etc., into operative dentistry, it was taking in a very large field. He said old members of the profession had worked in the dark and hundreds of teeth were saved now compared with one at that time.

The subject was passed, and the meeting adjourned.

AFTERNOON SESSION.

The meeting resumed at 3:30 P. M.

The minutes were read and approved.

Under miscellaneous business, the subject of surgery was placed in section VI.

Section V was passed, and section VI, Pathology, Surgery, Materia Medica and Therapeutics was taken up.

DR. HARLAN, (Ill.) made the report. He said: The discoveries in dental pathology during the past year hardly warrant a paper. The most worthy are those of Miller, of Berlin. Next that disease known as lumpy jaw caused by an anarrhophic germ that is always present in the mouth and throat, and has been found within the gum over erupting wisdom teeth. It is not found in fistulous abscess. On exposure to the oxygen of the air, this germ is killed. Dentists are entering more into the green fields of Materia Medica and Therapeutics. As a remedy for sensitive dentine, I have been having good success with cannabis indica, prepared from ten ounces of the flowering top to one pint of alcohol. First the cavity should be thoroughly washed, and the gums painted with the liquid one minute before applying the rubber dam. In England it was used years ago for extraction. The liquid was heated and the beaks of the forceps were dipped into the solution. Turpenes ($C_{10}H_{16}$) is a ready absorbent, disinfectant, antiseptic, stimulant, and is non-irritating. For anarrhophic germs, as in a closed abscess, it is good, and it is also used in root canals.

DR. PATTERSON, (Mo.) then read a paper entitled "The Catarrhal Nature of Pyorrhea Alveolaris." He said: The parts subject to catarrhal diseases are the pharynx, larynx, trachea and bronchial tubes. The symptoms are redness of the parts, inflammation, swelling, the exudations become offensive and hyperpla-

sia follows. The exudation is watery at first, but pus corpuscles are soon involved, and organisms become prevalent, making it irritating and excoriating. The disease, at this stage, spreads to the surrounding parts, and a large tract may become involved, and it may be extended to the mouth where the symptoms are almost identical with those of pyorrhœa alveolaris. Catarrh, as a rule, originates in the air passages, proper; but a large proportion of the discharge drips down into the throat and is hawked up into the mouth where catarrhal infection may occur, or catarrh may arise in the mouths of those persons who are mouth breathers.

In Ziemssen's Encyclopedia of Medicine, we find "that in catarrh there is a predisposition to acute exacerbations. An ulcerative process may also be developed; the fluids retained throw down chalky deposits and thus form bony concretions, and hyperplasia of the membranes may lead to actual new formations and polypoid excrescences. As the ulcers often penetrate deeply, and sometimes after destroying the periosteum, produce caries, it is evident that just as in the case of occlusion and catarrh, so here a vicious circle is established. The cavities adjacent to the nose may also be attacked, and thus a complication is produced, difficult to diagnose and cure. The most familiar are the processes that take place in the cavities of the upper jaw. The well-known symptoms of pyorrhœa alveolaris are, as you know, festooned margins of the gum, ropy saliva, a red line on the gums; at the necks of the teeth, generally, pus accumulates, the processes are absorbed, the teeth loosen and extend from the sockets and become sore to the touch. Sometimes, in the later stages of the disease, deposits occur on the teeth. Thus we see a marked similarity between catarrh and pyorrhœa alveolaris, for, first, the same mucous membrane is involved; second, the effusions are identical in character; third, they are alike infectious; fourth, the burrowing of pus is common to both; fifth, destruction of the periosteum is seen in both; and, sixth, the deposits in the two diseases are similar. He cited a number of cases that had come under his observation and found that in all there was a catarrhal affection of the nasal passages, and a majority of the patients were, to a greater or less degree, mouth breathers. To sum up, he thought the two diseases were very similar, if not identical, and he hoped the profession would look further into the matter.

DR. ATKINSON, (N. Y.) then read a paper on the treatment of pyorrhœa alveolaris. He said that true diagnosis was the first requisite. That a flow of pus was evidence of a failure of nature to form new tissues. That traumatic pyorrhœa had been induced by the presence of foreign bodies in the alveolus, such as pieces of bone, splinters of wood, pieces of teeth, etc.; and that the cases were cured by the removal of the irritant. Calcareous deposits never cause pyorrhœa alveolaris. That parasiticides were capable of destroying microbes. That in the treatment of pyorrhœa, constitutional exercise was necessary; such as gymnastic exercises, bathing, regular sleep of at least eight hours in twenty-four, and that cinchona, given in two grain doses, six or eight doses per day, was beneficial. Where there was a slight recession of the gum from the tooth, he used elixir vitriol. Where there was greater recession, aqua regia; and where it was severe, he found nothing equal to carbolated potash, seeing that it only touched the pockets without flowing over, and especially into the mouth, or on the lips. Where there is no opportunity to cover in the pocket, to get a new growth, he said, I use sponge grafting. Of this, he said: that in the whole history of surgery, there was no method of so great importance, or so little understood and practiced, as sponge grafting. Efforts to assist Nature in healing wounds, and to reproduce lost tissue, have been various and bungling. Healing by first intention has always been regarded with high favor. Transplanting of bits of skin led to such kindly results, that the introduction of some vehicle into which blood plasma be received and held in place, was sought. At length sterilized tents were introduced. Sterilization is now known as Listerism, and is a great step of advancement. The accounts of the use of a sterilized sponge, on the other side of the Atlantic, led me to try it, and the result has been most satisfactory. He then explained how he applied the sponge to the parts, and covered with plaster to prevent exudation of serum, etc., and how the result would be healing, by the first intention.

DISCUSSION OF THE PAPERS.

DR. MARSHALL, (Ill.): I would like to ask Dr. Atkinson how he protects the graft in the mouth?

DR. ATKINSON: I take an impression of the teeth. If the

teeth, in pyorrhea are too long, I trim them off so they will be natural. I get a plaster cast and build up with wax, a little higher than the graft is to come. I then make two plates, and put the sponge in between them. The best sterilizer is peroxide of hydrogen.

DR. MARSHALL, (Ill.) said he had tried sponge grafting, but it became displaced in the mouth, and the experience of others had been similar. He thought cannabis indica not equal to cocaine for sensitive dentine. He had seen cases of pyorrhea alveolaris that he thought had a constitutional origin, as in cases of uterine disturbances.

DR. L. L. DAVIS, (Ill.) said that in using cannabis indica his experience had been just the opposite to that of Dr. Marshall. In one case, a very sensitive cavity, where he could get no result from the use of cocaine, cannabis indica obtunded in five minutes, and he was enabled to remove a layer of decay as thick as the finger nail without a particle of pain. In other cases he had obtained the same results. As an obtunder for the extraction of teeth, he could get no satisfactory results.

DR. THOMPSON, (Kan.) thought Dr. Patterson was on the right track. He had himself been experimenting. He had been impressed with the belief that pyorrhea came from renal trouble; but by observation and investigation he found that he was on the wrong track. He thought that blue stone, sulphate of copper, carried in the pockets of the gums proved quite satisfactory.

DR. KING, (Neb.) said that of eight years experience he had kept a record, and found that fifty per cent. of the patients suffering from pyorrhea, were in good health. He attributed the first cause due to mercurial administration. He also thought that serumal, or calcareous deposits were causes of the disease.

The discussion was here suspended and the meeting adjourned.

EVENING SESSION.

The meeting was called to order at 8:30. The minutes of the previous meeting were read and approved.

The Secretary read a letter from Dr. Clifton, of Texas, whose son was so dangerously hurt at the time of the Association's meeting at Saratoga last year.

A vote of thanks was extended to Dr. Clifton for the kind

expressions in his letter, and congratulations over the improvement of his son were freely expressed.

By motion, section VI was passed.

Section I, was taken up, and the report of Dr. Truman was read by Dr. Stockton. He described the new method of working with rubber, which did away with packing and flasking. He first marked on the model the outline of the plate, then cut thick tin foil the shape of this, but leaving it one-eighth of an inch less in size all around the edges. Take a cement made of vulcanite rubber dissolved in chloroform, and paint the portion to be covered with foil. The form should not be pushed out of shape. When the cement sets, paint all of the model to be covered by the denture. Instead of moulding in as usual, use a little chloroform. You may warm the rubber a little so that it will cohere. In other words prepare the case for flasking, using rubber instead of wax. This done, you can then flask and vulcanize.

DR. HASKELL, (Ill.) then gave a good talk on "What to do and how to do it." He first took up artificial dentures in general. He said he had seen dentists who did not realize the difference in the conditions and shapes of different mouths. Mouths vary very much; some are hard, others easy, to fit. The lower jaw has much to do with the fit. If it strikes square, and the upper jaw and palatine surface of the mouth be in favorable condition, there is no trouble. Again, if there is a low ridge, the tissues soft, and the lower jaw projects beyond the upper, we find a case hard to fit. Faulty antagonizing often renders teeth worthless; yet, grinding away will sometimes make the plate useful. Again; in preparing the mouth, shall we extract? When the patient has reached that age in which a denture is needed, what teeth shall we remove? In answer I say: The teeth necessary to make that plate as perfect and useful as possible. In regard to materials for making plates, metals are best. Rubber is so universally used because it is cheap, and easily made. It is the worst material ever put into the mouth. Thousands of mouths have been ruined by vulcanized rubber, on account of the absorption, or rather the waste material carried off not being replaced. If a plate is loose and the air can circulate under it, there is less damage to the tissues. All metals are good conductors of heat, and are therefore preferable in the mouth. Undue absorption takes place under metal plates caused by undue pressure. It is the dentists place to educate his patients, and he should advise metal plates.

The next question is are you able to make a metal plate? Plaster makes the very best impression. Use no air chambers. The plate should not bear on the soft palate, so build on a thin piece of wax to prevent this. Where the mouth is not hard in the centre, swage the plate right to the mouth. With a film of wax raise the cast in the center, all but about one-fourth of an inch, and then scrape out about one-eighth of an inch. In regard to dies, there is but one metal that has the requisite properties, hardness, toughness, smoothness, low fusing point, and non-shrinkage, and that is Babbitt's metal. But be sure you get a good quality; for the cheap metal is not good, as lead has been substituted for tin. Add one-eighth or one-sixth part tin to the lead, for counter dies. This hardens the metal, and used thus, it is seldom one has to make a second die. Bridgework is doing incalculable harm. It is impossible to keep clean, especially where bands are placed around the teeth. I saw a case in Chicago, where the band covered the entire tooth. It had been cemented, but the cement dissolved, the fluids got in and decomposed, and the tooth decayed. Sometimes the biting on dentures loosens a tooth so that it becomes of no use and comes out. There are, however, some cases where it can be used, and I would say use it, as a last resort.

DISCUSSION.

DR. EAMES, (Ill.) said he hoped to see the time, but hardly expected to, when fellow-mortals would not have to apply artificial dentures to the jaws. He prefers dentures made without air chambers. Scraping out of the model was not the only essential to obtain a good fitting plate, but the plate must extend well up beneath the lips and cheeks, so that it may lie snugly on the edge. It must come well in contact with all parts of the mouth. His method of equalizing pressure is, instead of using wax in the centre, he trims out where the parts are soft. He lets the rubber run back beyond the spine, and if necessary, uses soft rubber there.

DR. MORGAN, (Tenn.): Dr. Haskell attributes the cause of soft tissues to the undue heat evolved by the wearing of rubber plates. Now the mucous membrane is not an eliminator of heat, and there would be no heat unless the plate caused irritation and inflammation. I think the principle regarding the extraction of

teeth is an erroneous one. For instance, for a plate of two superior incisors, would you extract ten more to make it fit better?

DR. ATKINSON, (N. Y.): Rubber does produce heat by anesthetizing the centrifugal nerves first, which causes a paralyzing of the vaso-motor nerves, so that the blood is brought to the part and retained there.

DR. HASKELL, (Ill.): As to what Dr. Morgan said about the extraction of teeth, I would do nothing of the kind. In regard to bridge-work, I excepted that form made by E. Parmely Brown, for I think it is the best I have ever seen.

DR. SPALDING, (Mo.): If you take the temperature of the mucous membrane under a rubber plate where inflammation does not exist, and test it under a metal plate, you will not find $\frac{1}{4}$ of a degree difference. The tissues are irritated by the rough surface of the rubber plate, and if the plate be polished, it will be very beneficial.

DR. BARRETT, (N. Y.): The more you polish the worse it is.

DR. ATKINSON, (N. Y.): The shutting up of the mucous follicles is the antecedent to inflammation. People who keep rubber plates in their mouths at night, and do not give the follicles a chance to breathe, will have trouble.

The subject was passed and the meeting adjourned.

FOURTH DAY—MORNING SESSION.

The Association reconvened at 9:30 A. M., with President Crouse in the chair.

The minutes were read and approved.

Under Miscellaneous Business, there were reports from several committees, and by motion, a committee consisting of Drs. Dudley, Pierce, Foster, Brophy, Thompson, Bauer and Abbott were chosen to look into the advisability of organizing a body for the International Congress in 1887. Sec. VII was then reported upon. A vote of thanks was given the members of the Minnesota societies and the Minneapolis dentists for the kindness expressed; also to the hotels, railroads, etc.

DR. E. PARMLEY BROWN, (N. Y.) next read his paper on

"DENTISTRY: ITS PAST, ITS ENCOURAGING PRESENT, AND ITS BRILLIANT FUTURE."

He said: The profession that, a few years ago, was wrested from a low estate, and looked upon as something even vulgar by the masses, hybridized with truth, (i. e. science) impregnated with learning, illuminated with art, and poetry stimulates its genius. It has risen, has become great, is to become greater, and is never to die while man survives to people mother earth. Dentistry is a scientific art, because it is made up of a greater percentage of that which is strictly artistic in the execution of its practice than of anything else. Qualified by science, because science holds a large place in the proper preparation of the dentist, and his successful work. Medicine is almost a pure science, surgery an artistic science, painting and sculpture pure art.

The evolution of dentistry from its despised condition may be likened to the common thistle, which, when crossed with brilliant hued plants, drops the pricker, discards its evil points, and gives us the beautiful coleus of to-day—the most luxuriant garden and lawn illuminator that nature, aided by horticulture, has ever produced. Dentistry as it was, the common handicraft thistle of the past, with its many points of abhorrence, engrafted with science, gives us dental art, of which we are so proud, and, of which the world shows its substantial admiration and appreciation. We are not a part of anything, but a something complete within itself; closely allied to medicine and surgery, but principally what they are not—operative and artistic dentists—and until the dental art, as now taught to the dental students, is taught to all medical students, (which will never come to pass), dentistry will never be a specialty of medicine. The dentist is like the oculist and optician combined. His oculistic part, (oral surgery), is medicine's specialty; his optician part, (dental art), is not in the M. D. curriculum. The nature of the case does not permit that it ever can be. To study and practice medicine and dentistry successfully, in competition with the present divisions of labor, is more than one body and brain can endure. The tide is flowing the other way. There is too much in dentistry for even a superior genius to master. The specialties in dentistry, dental surgery, operative dentistry, prosthetic dentistry, anæsthetic dentistry, and regulative dentistry, show that, though fond of cutting, yet are we being carved up into many sub-divisions to satisfy the demands of a hungry public.

The days of the stage coach in dentistry have passed. Already the lightning is reined with a curb bit, and obeys the operator's will. Of the possibilities of the future, you may dream and surmise; but no man can predict them. The age of slow progress is buried deep beneath the ground, where grow the trees of knowledge and advancement; the carcass of the past is fertilizing the luxuriant growth of the present; the lightning flashes round the world in the twinkling of an eye, enlightening the nations; night is turned into day: distance is almost annihilated, and the microscope makes the atoms visible. Steam is photographing the brains of men of progress, and hurling the imprints over the surface of the earth, like downy seed carried on the wings of the hurricane, that good knowledge may take root, sprout, bud, and bloom into blessings for mankind. Steam is hurling the hand of expertness, here, there, and everywhere, that man may see, hear, and learn. A seemingly visionary prophet would be he indeed, who would predict the dentistry of fifty years hence. Look back a half century and see the hopeless task it would have been to sketch or paint the picture of the present.

Putting your shoulder to the wheel makes progress. Many shoulders to the wheel make much progress. Let us all resolve that our shoulders shall do their duty. Let us steer between the two strands of rusting out and wearing out; then will we be sure of holding out. The successful dentist of the future must be an educated and polished gentleman, in addition to his being a master of his profession. The lady of the near future will select with jealous care, the physician who will guard from harm her oral case of jewels rare; and with ten times the fastidiousness that she will show in selecting the physician to assist her in augmenting her posterity. The Archimedian lever that will elevate honest effort and ability, is the reduction of the amount of work we do, and the increase of the fees. He is violating the laws of physiology, philosophy, and Christianity, who labors unceasingly; and he is transmitting an evil influence to those around him, and to posterity, which will overbalance his life of toil. The wife of Charles Dickens said: "It may be necessary for the world to have its great geniuses, but it is a terrible thing to live with one." Dickens died more than twenty years before the time a true philosopher should allow his heirs the pleasure of dividing his estate. If there is wisdom in making oneself miserable in trying to be happy, then there is wisdom in overwork. Dickens poured out

every drop of his affection in his literary works, and there was no kind word left for those who claimed it most.

Herbert Spencer predicts that the amalgamation of the races, under such favorable surroundings as are found in America, will, in a few generations, produce a superior race of beings. With the dental ascendancy that America possesses to-day, what must be the result in a few generations, on a people educated to treasure their teeth as pearls of priceless value? Without such preservation, a people cannot be truly healthy and happy, and consequently great.

"Sunlight!" "sunlight!" our cry has been.
Our cry should ever be;
And cursed will the dentist be who does without it—
A sickly plant, a withering, stunted, tree.

Dentistry! It began, when, in the early ages, in its night of utter darkness, some pre-historic being, with his flint and iron ignited the pine knot; when he began to see dimly. Time rolled on, and toothache tormented man with its terrors, until some semi-civilized creature molded the tallow candle of dental advancement. Then oil was poured upon the troubled waters, and set ablaze with the friction match of still further progress; until gas lighted our profession more surely in the pathway of science.

Now we have arrived at the dazzling electric light era of our existence, and the Edison's of the dental profession are lightening up the dark corners of ignorance, constructing ingenious appliances, and investigating minutely, everything but the infinite. The ideal dentistry will be universally practiced only when all other things good for man's advancement, are also in pace with it. An appreciative public, making a demand for it, can alone produce it.

The paper was received with a storm of applause, after which the election of officers for the ensuing year took place, resulting as follows:

- DR. W. C. BARRETT, Buffalo, N. Y.—President.
DR. L. C. INGERSOLL, Keokuk, Iowa.—First Vice-President.
DR. A. T. SMITH, Minneapolis, Minn.—Second Vice-President.
DR. G. H. CUSHING, Chicago, Ill.—Recording Secretary.
DR. A. W. HARLAN, Chicago, Ill.—Corresponding Secretary.
DR. G. W. KEELY, Oxford, O.—Treasurer.

The Executive Committee elected, consists of Drs. Crouse, Dudley and Thompson.

A vote of thanks was extended to President Crouse for the efficient manner in which he had conducted the meeting.

DR. THOMPSON then offered the following :

Resolved, That as an expression of the appreciation of the valuable services of Dr. J. N. Crouse, President of this Association for the closing year, and of his many excellent and professional qualities, that he be presented with the gavel which he has so effectively wielded, as a souvenir of this most successful and enjoyable meeting, and the same to be appropriately mounted and inscribed.

DR. PIERCE offered an amendment to the constitution vesting the choice of the place of meeting of the future in the hands of the executive committee.

The Memorial Committee, Dr. J. Taft, Chairman, reported on the death of Dr. Isaiah Forbes, St. Louis, and Dr. J. G. Ambler, of New York. Also an appropriate resolution on the death of General Grant.

Report accepted and adopted.

DR. HUNT, (Ia.) reported on section II, DENTAL EDUCATION.

Report adopted.

The installation was next in order. Dr. Barrett, President elect, was escorted to the chair, when Dr. Crouse said :

"Gentlemen of the Association,

I take pleasure in introducing to you our new President, Dr. Barrett of Buffalo."

Dr. Barrett said :

Gentlemen: I love dentists better than any other class of men. I do not intend to make a speech ; so, what is your pleasure?

The president appointed as a Publication Committee, Drs. Cushing, Harlan and Darby.

The secretary announced that one hundred and three new members had joined the association at this meeting.

Adjourned *sine die*, to meet at the call of the Executive Committee, in the year 1886, at such place as shall be selected by the committee.

FRIDAY AFTERNOON.

The excursion to Lake Minnetonka, given the association by the local committee, was one of the most enjoyable occasions of the week. A special train to the lake, the four hours ride on the beautiful waters of Minnetonka, the banquet at Lake Park Hotel, music, toasts, etc., filled the heart of every individual to overflowing with joy: and it was much regretted they had to leave, even at 12 P. M.

Correspondence.

"I charge you that this epistle be read."

WEDGED FLASKS.

IN the note on this subject in the JOURNAL, for August, there is one omission, i. e. that wedges should be used with spring steel bands instead of the ordinary wrought iron straps. I have used a spring tempered steel band $\frac{1}{2}$ in. thick and $\frac{3}{4}$ in. wide to the exclusion of every other method of holding flasks together, the advantage being, that if the parts are not absolutely close when put in the vulcanizer they invariably become so before the rubber is vulcanized. This method of securing and closing flasks has been so perfectly satisfactory that I never troubled to try any other method.

THOS. FLETCHER.

WARRINGTON, ENGLAND.

ANOTHER METHOD OF TAKING ARTICULATING IMPRESSIONS.

ED. JOURNAL:—But for Dr. Spence's published method of taking an articulating impression, I should never thought of publishing one I have for years practiced to the exclusion of all others. After building up the trial plates with wax, indicating the length and fullness the teeth must be, I try them in the mouth together to see if all parts come together evenly, if not I trim off or build on as circumstances indicate. When both the upper and lower come together right at each natural occlusion, I instruct

the patient to keep the mouth closed, strike a median line, mix some plaster with strong salt water to facilitate quick setting, having the mixture stiff, open or part the lips, not allowing the trial plates to be moved, and press a tablespoonful of the stiff plaster with the index finger of the left hand against the anterior surfaces of the wax extending to the right and left as far back as necessary to hold the two together; after the plaster sets, then remove all together and place them upon the antagonizer just as they were in the mouth. After the models, with the trial plates on them are secure in the antagonizer, remove the plaster on the anterior part of the wax plates and you have everything in readiness to adjust the teeth. Until I adopted this method I had much trouble to get my teeth to antagonize well when they were put in the mouth, and had often to make lower sets over for want of a correct antagonization. Without this method, using the old guided key lines, a very slight variation in arranging the trial plates together when taken out of the mouth separately, will make a great difference in the two sets when they come to be put in the mouth.

EUFALA, ALA.

S. G. ROBERTSON.

Compilations.

"Gather up the Fragments."

THE HÆMOSTATIC PROPERTIES OF AMBROSIA ARTEMISLEFOLIA (RAGWEED.)

BY J. H. HILL, M.D., IN NORTH CAROLINA MEDICAL JOURNAL.

At a meeting of the State Medical Society held at Tarborough in May, 1883, I read a paper on the hæmostatic properties of "ragweed" (*ambrosia artemisiaefolia*), which was referred to the Committee on Publication. As the paper did not appear in the published Transactions of the Society, I applied to Dr. Wood to have it returned to me. He stated that through some inadvertence it had been lost, and requested me to rewrite it, with any additional evidence I might have of the value of the remedy. I failed to do so at the time, but within the last few weeks hav-

ing had occasion to use it in two or three cases, and mentioning the fact to Dr. Wood, he again requested me to write an article on the subject.

Ambrosia artemisiæfolia (ragweed, carrot weed) is, as far as I know, an indigenous annual weed, always following a wheat crop, flowering about the middle of August. Not professing to be a botanist I cannot give a clearer description of it. Dr. Francis Peyre Porcher, in "Resources of Southern Fields and Forests," says: "*Ambrosia artemisiæfolia* (ragweed) grows in cultivated lands and pastures; collected in St. John's, Charleston district. The plant is used in fevers in Maryland as a substitute for quinine; a tincture is made or the juice given with whiskey. It is very bitter and is thought to be useful." It is used as a common domestic remedy for nose-bleed, epistaxis, in Rowan county, where I first heard of its properties and witnessed its effects as long ago as 1857, where I frequently saw it used to arrest hæmoptysis in the case of a negro-carriage driver of my father-in-law. This negro was a frequent sufferer from that complaint, and always carried a portion of the weed in his pocket, and being attacked would take a chew of it, swallowing the juice, with almost immediate relief, and was told that he had thus used it for many years. I also saw it used as a styptic and applied locally in a case of violent epistaxis in a boy of 10 or 12, with immediate effect, when I thought from the violence of the hemorrhage, the posterior nares would have to be plugged. As I stated before, it was the common domestic remedy through that country for these complaints, as I was informed by Drs. Whitaker and Summerell, the latter of whom confirmed my statements at the Tarborough meeting.

In my previous paper I referred to several cases in which I had used the remedy, but more particularly to the following: On the 23d of September, 1882, I was called to see a child, son of Mr. William Smith, aged about six years. Found him bleeding from the nose, gums and bladder, passing a short time after I arrived nearly a pint of what I took to be pure blood from the bladder; skin tallowy, and the legs and body covered with spots of purpura from the size of a pinpoint to that of a silver dollar. He had been bleeding for several days, and had been seen by two other physicians, who had given him lead and opium, aromatic sulphuric acid, etc., etc., with no good effect. I was also informed

that two sisters of the father had died from hemorrhage, and that the family all had difficulty in arresting what to others would seem trivial bleedings. I thought it a very bad case, and so informed the father, but told him that if I could find a certain weed I knew of I might possibly arrest it. Being a stranger to the family, I saw they looked upon my proposition rather with suspicion and hesitancy, but at length one of them agreed to go with me and look for it. I found a bunch of it in a fence corner, and gathered a handful of the leaves which I put into a cup of boiling water and made a strong tea, of which I gave a large tablespoonful to the boy, at first every half hour and then at longer intervals. I plugged the nostrils with cotton saturated with the *per. sulph. ferri*. Within fifteen minutes the effects of the medicine were seen. The oozing from the gums ceased, there was none from the nose, and, as I was afterwards informed, when he made water it was only slightly colored by blood. I remained with the case four or five hours, and when I left prescribed *mur. tr. ferri* in 3-drop doses in a glass of water three or four times a day. The next day the father came to town, called at my office perfectly delighted, paid his bill, and since then my reputation has been made in that neighborhood, although I did cure the case with "yarbs."

Since then the boy has been perfectly well, except that occasionally in the spring there is a tendency to bleeding from the nose—always arrested, though, at once by the ragweed, of which the father is always sure to have a good supply on hand.

On the 5th of March, 1885, I was called hurriedly to see Mrs. W. of Goldsborough, before breakfast. Her husband came for me very much excited, stating that his wife was bleeding to death, the blood just streaming from her mouth; that she was the patient of another physician, but that he was absent in Washington at the inauguration.

I put into my pocket a package of ragweed, of which I always have a supply, gathered while it is in bloom, and went with him at once. I found the lady propped up in bed with a chamber mug by her side nearly full of blood which she was spitting up by the mouthful—evidently a case of hæmoptysis. I pulled off a portion of the weed and requested her to chew it and swallow the juice while I was having a decoction prepared, which, as soon as it was cold, I gave her in wineglassful doses, assuring her it would do the work. In an incredibly short space

of time the hemorrhage ceased. She was directed to continue the medicine at intervals of three or four hours. I called in the evening and found her comfortable—no blood except when she would cough up a few hard coagula. Called the next morning, found her up, eating a hearty breakfast of beefsteak and buckwheat cakes; no sign of blood. A day or two afterwards, she sent to my wife and asked her please to send her a little of the “weed,” she would not be without it for anything. I put her on the tincture of iron, and she has had no trouble since.

The last case to which I shall call attention is a wound of the leg, referred to before. Mr. Wright Smith, to whom I was called on the morning of the 16th of March, 1885. His brother came for me and told me that he had been bleeding for four days, and although another physician was attending him he wished me to go and see him.

I got to the home about 3 o'clock P. M.; found my patient a man about 30 years of age, had always been in good health except an attack of bronchitis a year before; had complained for a week or more of debility, pains in the limbs, weariness and disinclination for work, and shortness of breath. His physician, he said, had diagnosed his trouble from the liver, and had given him calomel followed by quinine; that four days before he had commenced to bleed from the nose and mouth; had sent for physician, who had given him ergot and aro. sulph. acid, which he was then taking, but as it had no effect his brother had given him some of the ragweed and advised him to send for me. As the little he took seemed to do him some good, though he was afraid of it, and would not take much, he consented to send for me.

I found the blood to come from his nose, tongue, gums (which were very spongy) and throat. When I drew down his lip to examine the gums the blood oozed up in such quantity as to nearly fill the mouth. I gave him a chew of the ragweed and had a cupful of the tea made; as soon as this was cold I gave him a wineglassful every hour. After chewing the first mouthful there was literally no more bleeding from the gums or tongue. As he lived eighteen miles from Goldsborough I stayed with him all night. He passed a comparatively comfortable night. Before I left next morning he had sat up and eaten a hearty breakfast, with the barest sign of blood when he would clear his throat, which he said came from the coagula in his nose.

I will mention that while I was examining him I requested

him to let me see his legs, which I found, as expected, covered with spots of purpura. He said he had not seen them before and did not know how long they had been there. I put him on 3-drop doses of tincture ferri three times a day.

Five days afterwards his brother came to see me, perfectly satisfied, since there had been no bleeding since the night after I left, when he had blown the coagula from his nose there was slight oozing, but the ragweed soon caused it to stop.

Now, Mr. President, having detailed the virtues of one of our indigenous remedies, I would like to say a few words upon a subject in which I take much interest, although I may lay myself open to the sarcasm of being an "old woman doctor," a "yarb doctor," etc. But how many of the common domestic remedies of our country are valuable? I could myself name a good many, and I doubt not but that every gentleman present has some remedy in daily use which is not to be found in the *materia medica*—some remedy which he knows by experience is valuable, although he may have gotten it from an old woman, maybe an old negro. How many of us during the war were forced to use these common remedies, and with what joy we hailed the advent of that valuable work of Dr. Francis Peyre Porcher, "*Resources of Southern Fields and Forests.*" Suppose each member of the North Carolina Medical Society should contribute a short paper giving his experience with some home remedy, trifling, perhaps, in itself to him, but collectively of what incalculable value to the profession, particularly so as to country practitioners!

Since writing the above I have seen the following extraordinary communication in the *North Carolina Medical Journal* from Dr. W. C. Galloway, of Snow Hill, Green county, North Carolina:

"I have had three severe cases of hemorrhage to arrest by plugging the posterior nares with sponge. Ragweed, that Dr. Hill extolled so highly at the Tarborough Convention, did not stop them, nor anything else short of plugging; though in justice to the dear, lamented, potent ragweed (do give me a better and a more scientific name for the homespun plant), I must confess that it seemed to do some good in one case."

Why dear? why lamented? I suppose that the doctor must be one of those who can see no good thing in any home remedy, who is afraid to call any medicine by its common name for fear

of derogating from the dignity of the profession—who would not call a scratch a scratch, but “merely an abrasion of the external cuticle,” or a chill and fever “a tertian or quartern malarial intermittent pyrexia”—who believes with Bacon that “They be the best physicians who, being learned, incline to the traditions of experience, or, being empirics, incline to the methods of learning.” Now, I hold with the same great man that “He who hath learning, be it ever so little, and holdeth it back from those who have less, is as unprofitable a man as the most ignorant that lives.” Did Dr. G. use the remedy properly? Did he gather it at the proper time? Did he give it in sufficient quantity? I should really like to know, though, why he calls it dear? why lamented? I hope the doctor will be satisfied with the officinal name, “*ambrosia artemisiæfolia*,” which I have adopted in this paper, after Porcher and Wood. For my own part I am satisfied to call things by their common names, believing that “a rose by any other name would smell as sweet.”

Just here let me report the following case:

On the morning of the 12th of May, at 8½ o'clock, I was called to see Ellen Dosmond, aged 8 years. I got the following history from the mother: Had recently removed to Goldsborough from Norfolk, Va. For the past five years had been subject to frequent spells of epistaxis, for which she had been treated by four physicians of Norfolk, frequently requiring the plugging of the posterior nares. Any slight cut would bleed excessively, and they were afraid to have her teeth extracted, they bled so. Two years ago had her ears pierced for earrings, and the hemorrhage was so great they feared she would die.

I found a stout girl, well grown for her age, but the complexion muddy, face puffed, no purpuric spots, though at times, her mother said, her face was covered with purple spots the size of a pin's point. She was bleeding freely from the left nostril. I gave her a portion of raw weed to chew, and had a strong infusion made, of which I gave her a tablespoonful every half hour. I made a plug of the weed and inserted it into the nostril; in fifteen minutes all bleeding had stopped. I called again at 10½ o'clock—no bleeding; at 1 o'clock—no bleeding. At 6 o'clock the grandfather called to see me, and said the child was up and playing about, and has continued so ever since.

DISINFECTION.

WHETHER microscopic organisms be the cause or consequence of disease, or whether these organisms be in themselves or in their pabulum, or by their spores, agents of infection, it must be admitted that their agency is limited and controlled by conditions of time, place and circumstance, and that therefore these conditions become at least equal in importance to the organisms themselves. That is, there are at least two factors to the process of infection which, if not of equal value, are equally indispensable, and which bear a relation not unlike the interdependence of the sexes.

While biological investigations are pushing one of these factors—namely, the germ theory of the origin of disease—with the greatest ability and activity to results of great importance, the other factor is not investigated with the same activity and enthusiasm, but is rather left to the wandering devices of empiricism.

If there be a specific germ for each infectious disease, and that germ be of itself perfectly infectious, every germ should produce the disease under all conditions, and it would be only necessary to control the germs to limit the disease, and to kill all the germs would be to eradicate the disease. It is known, however, that no infectious disease has been eradicated, and it may therefore be inferred that the germs are not absolutely controllable. But it is also known that many infectious and epidemic diseases were controlled and their ravages prevented long before a germ theory was thought of, and by processes of disinfection that were not germicide in the present acceptance of that term.

It may be concluded then that the process of infection requires, first, a power to infect—or infectious matter; and second, a condition susceptible of being infected, and practically, that infection can not occur without both elements to the process. Perfect disinfection will, therefore, result from a control of either one of the elements essential to the process, whether the other be controlled or not. If this be true, however, it by no means indicates that either element of the process should be considered to the exclusion of the other, but rather that each should receive due attention, and thus most effort will be expended upon that element which is within easiest practical reach.

Some modification of the germ theory being admitted, then germicides become very important agents in disinfection. But as it is manifestly impossible to reach all the germs of any disease, the older, and thus far the most effective practice of cultivating and extending the germ-proof condition becomes of more importance still.

Almost all that is absolutely known of this germ-proof condition is embraced in the general acceptance of the word cleanliness. Personal cleanliness may not always render single individuals germ-proof, but community cleanliness would probably render communities germ-proof, for, as a matter of fact, the cleanest districts are least affected by infectious diseases, even in epidemics when the germs are in such enormous numbers as to be present everywhere in almost equal effective force. Irrespective of the conditions of being well fed, well clad and well housed, the cleanly classes of all communities appear to suffer least from infectious diseases, whether such occur in sporadic or epidemic forms, the number of cases as well as the number of deaths being fewer.

Therefore as uncleanness is willful and voluntary, and is never enforced or compulsory, disease from it must be regarded as the penalty of broken law, and as illustrating forcibly the expression of Emerson that "The law at the foundation of all things is retribution."

There are not only various kinds of uncleanness, but various degrees of the same kind, which variously intensify the forces of infection, and those which are most hurtful, in both kind and degree, involve some process of destructive or reconstructive decomposition. The elements of filth are innocuous, whether separately or combined, and probably afford no pabulum for germs, nor any organic poisons of any kind, until a series of chemical reactions occur which ultimately result in such harmless products as carbonic acid and water. But these products reached through complex stages which yield generation after generation of microscopic life, and of poisons like the ptomaines. How this kind of filth, which accumulates around human habitations and becomes most hurtful where uncleanly human beings are most numerous—tends to multiply and intensify infectious diseases, is not understood, but that it has such an effect is not doubted; nor is it doubted that this effect is produced by the chemical and biological processes of decomposition. It is not then, the elements

of the filth which promote infection, but the processes by which they are decomposed, and the problem for disinfection is to destroy the elements, or to prevent, arrest or modify their hurtful processes.

Most of these processes—if not all of them, are of the nature of fermentation, and as such are arrested with comparative ease by a large class of chemical agents, and it is in this way that these become disinfectants.

The entire atmosphere, being filled with microscopic germs, and in this sense always infected, every object directly or indirectly exposed to it is abundantly supplied with such germs awaiting the conditions necessary to their development and multiplication; and in general terms these conditions are first a pabulum and then warmth and moisture. Without the chemical reactions which yield them pabulum or food they do not develop, and without these they may have neither of the other essentials to development. In this condition immense numbers of them doubtless die and others linger upon the border line between life and death, to be easily destroyed by many agencies in many ways. But a comparatively small number simply await the conditions necessary to development, and this number is doubtless controlled by the law of "survival of the fittest." They are, however, harmless without the conditions for development, and as these conditions, though present, may be more or less favorable, the development will be more or less active and more or less hurtful, as the short-lived generations maintain the perfect type or degenerate from it.

Disinfection, then, means either the prevention, the modification or the arrestation of these processes, whether it be in the body and its surroundings in individual cases of infectious disease, or in the uncleanness of whole communities—whether the germs be those special to a disease or those of the general processes of decomposition—and disinfection may be perfect, or as complete as is possible under the conditions of the problem, without absolute destruction of the germs or poisons.

It is altogether improbable that the infectious material of any case of disease, whether this material be germs or not, can all be destroyed by any disinfectant or germicide, however potent, or however copiously applied. All that can be rationally expected is to diminish the chances of spreading infection to a minimum;

and this will be accomplished not so much on the proportion of germs destroyed, and germs from which the conditions of development are withheld, as by surrounding the case with germ-proof conditions of that absolute cleanliness which so reduces the susceptibility to all infection.

In some such way is disinfection well applied to both factors of the process of infection.

The doctrine of some biologists, that no substance is disinfectant which is not a germicide, seems liable to misconstruction, not only because it does not apply equally to both factors in the process of infection, but also from two other considerations: First, as to whether a given substance is a germicide or not, is often a question of quantity or proportion, and this is decided by the effect upon special organisms in special cultivation liquids. A substance in a stated proportion in a definite time kills certain organisms, and is, therefore, a true disinfectant because it is a germicide. Another substance in greater proportion or in a longer time, also kills these same or other organisms, but is not considered to be a disinfectant because of the larger quantity or longer time required.

Again, antiseptics are not admitted to be true disinfectants, because they do not, in small proportion, kill some specific organisms of cultivation fluids, nor prevent their multiplication. But this applies only—and is intended to apply only to the germ factor of infection, and this under artificial conditions that may be similar to this factor in natural infection.

The biologists nowhere doubt the value of antiseptics in the case of the second factor of the process of infection, namely, in preventing or arresting those processes through which uncleanness and filth develop the susceptibility to infection, and without which susceptibility the germs are comparatively inoperative.

It matters little practically whether a given agent kills the germs or so modifies the conditions around them as to render them harmless, as antiseptics appear to do even when not in sufficient proportion to be germicides.

Antiseptic dressings to wounds and injuries, whether acting as true disinfectants or germicides, or merely as systematic forms of scrupulous cleanliness, have done so much to reduce mortality and mitigate suffering that their value can hardly be disputed.

Again, in the treatment of all forms of filth and uncleanli-

ness in communities or districts where the authorities have not the power or means to prevent or remove the accumulations, antiseptics, by preventing or arresting the chemical processes which precede and accompany the biological processes, serve to limit and control the spread of infection which would occur without them, and thus they become true disinfectants, though in the proportions used they may not be germicide, or by preceding the germs may have none to kill.

A very large number of chemical substances appear to be actively disinfectant in this sense. Selections from them are generally made for such uses in proportion to their activity and low cost, and thousands of experiments are on record attesting their efficacy and comparative value. If any of these antiseptic substances or anti-ferments be added to filth in proportion sufficient to prevent or arrest the septic processes or fermentations until the filth dries up, or is washed away, it serves the purpose of a true disinfectant, though it may not kill a single germ among the millions, dry germs being harmless and being destroyed in vast numbers by natural causes.

In this kind of disinfection the chlorides and nitrates appear by long experience to be most effective. The time when chloride of sodium was first used as an antiseptic is probably prehistoric, and the same may be said of some organic substances of the aromatic series. The antiseptic and disinfectant properties of smoke are probably as old, although the same agency has been investigated only within the past twenty years in the phenols or carbolic acid class of substances.

As infection is a very delicate, sensitive process, partaking much of the nature of a fermentation in being almost as easily prevented and arrested, so the substances which prevent or arrest it are very numerous, and usually effective in small proportion under definite conditions. It is like fermentation also, in that it appears to be caused by matter in a state of internal tension which, under favorable conditions, enters into molecular commotion and change, multiplying itself and splitting matter around it into new forms which did not before exist. Hence it happens that two distinct classes of substances are applicable in treating it. And here, again, the one class destroys the infecting substance, while the other class so modifies the material to be infected that it is no longer susceptible to the infection, and the result is practically disinfection in both cases or in two ways.

If infective matter is to be destroyed, whether it be in its quiescent state of readiness to infect, or in its active state of multiplication and extension, it is found to be most sensitive to agents, which, like itself, are in a state of tension and proneness to split up. For example, all chlorides are disinfectant, but those which, in reacting with organic matters are reduced from a state of tension to a state of equilibrium or rest, appear to be most active. It seems probable that mercuric chloride, in reacting with infectious material, is reduced to mercurous chloride, both the free chlorine and the reduced salt entering into new combinations with the infection. Hypochlorites of calcium and sodium, and all other hypochlorites, are in a state of tension, and prone to split into chlorides and free or available chlorine. But it is doubtful whether this available chlorine is ever really free. It is merely freed from one base in the act of combining with another, exerting its maximum power in the process of changing bases. Chlorides of iron and zinc are both excellent disinfectants, and both, when in dilute solution, are ready to split into basic and acid combinations in the presence of organic matters with which they unite. Ferric chloride is especially prone to split in the presence of dilute solution of organic matter. The effect of this chloride in small proportion upon sewage water is most remarkable, disinfecting and deodorizing it very completely, and leaving neither its iron nor its chlorine in the liquid unless used in excess. This remarkable effect was noticed many years ago by Dr. B. F. Craig, of the U. S. Army, upon the turbid waters of the Mississippi river, a few drops of a moderately strong solution being sufficient to clear a gallon of the water without leaving in it any great proportion of either chlorine or iron. This is, both elements of the split went down with the precipitate caused or facilitated by the new combinations.

The intended drift of all this is to suggest that there are two distinct methods of disinfection which should be applied together, but which are still entitled to be considered separately, because they may be, and often have to be practiced separately, especially when epidemic forms of infection are to be prevented or combated. The one method is to destroy the infection, and the other is to change its pabulum from a condition of susceptibility to one of insusceptibility, wherein infection becomes more or less inoperative and harmless. The ideal normal condition of health does not admit of infection in any form, and therefore as the natural

laws of health are obeyed or broken, infection will be less or more common, and less or more virulent.—*Squibb's Ephemeris*.

THE PRIME SOURCE OF FOOD.

I DO NOT hesitate to say that this consideration brings us face to face with that system of feeding which is called "vegetarianism." We have not to consider how to avoid living on such a purely animal and natural food as milk, for example: we are not to consider how to learn to live on vegetables which contain more water than the seventy-five per cent of water which is present in legs of mutton and in other similar animal foods. But we really ought to consider the question of utilizing, on a large scale, all vegetables which, in nutrient value, stand above animal products. We have also to learn, as a first truth, that the oftener we go to the vegetable world for our food the oftener we also go to the first, and, therefore, to the cheapest source of supply. The commonly accepted notion that when we eat animal flesh we are eating food at its prime source can not be too speedily dissipated or too speedily replaced by the knowledge that there is no primitive form of food—albuminous, starchy, osseous—in the animal world itself, and that all the processes of catching an inferior animal, of breeding it, rearing it, keeping it, killing it, dressing it and selling it, means no more nor no less than entirely additional expenditure throughout for bringing into what we have been taught to consider an acceptable form of food the veritable food which the animal itself found, without any such preparation, in the vegetable world. With the light of these natural facts filling the National mind, the tendencies of all advanced scholars in thrift should unquestionably be to find out plans for feeding all the community, as far as possible, direct from the lap of earth; to endeavor to discover how the fruits of the earth may be immediately utilized as food, and to impress science into our service, so that she, in her laboratories, may prepare the choicest viands, minus the necessity of making a lower animal the living laboratory for the sake of what is just a little higher than cannibal propensities.—*Dr. B. W. Richardson*.

A JUST REBUKE OF A BAD HABIT.

DR. ALFRED SHEEN, of Cardiff, Wales, in his address before the South Wales branch of the British Medical Association, thus refers to a habit on the part of the public from which practitioners suffer alike in America and Great Britain: "The public have got into a bad habit, mainly through our own fault, of sending for us at all hours of the day and night, where there is really no urgency. Let it be generally accepted as a professional rule that patients requiring to be visited should send before a certain hour in the morning, and this annoyance will be much lessened. A gentleman sent for me one Sunday just as I was sitting down to dinner. I had my dinner before going to see him, and on my arrival I was greeted with the remark, 'I never saw such a set of fellows as you doctors are; you are never to be got hold of when you are wanted.' My patient was sitting comfortably in his easy chair, enjoying a light lunch, with some champagne to wash it down; he had been suffering from diarrhoea, but was then somewhat better. On the question of fee in this case, I acted upon this thought: people who want special trains must be prepared to pay for them, and if they are not they must travel by ordinary ones. I dare say some of you have heard the anecdote of the lawyer who received visits from a troublesome client on several occasions at his house in the evening; on one of these occasions the client apologized for being so troublesome: 'Oh, my dear fellow,' said the lawyer, 'pray don't mention it. I always charge double for consultations away from the office.'"—*Columbus Med. Journal*.

THE GOOD OLD TIMES.—From the discussions in our dental societies one is led to believe that the loss of the teeth is a modern invention, but it seems there were edentulous mouths in the XVII century:—

No man had a keener relish for flattery than Louis XIV., nor a more thorough contempt for the flatterer whose zeal outran his discretion. That very able prelate, the Cardinal d'Estrées, while dining at the royal table, on hearing the king complain of the inconvenience he suffered from having lost his teeth, so far forgot himself as to exclaim: "Teeth, sire! Who has any teeth nowadays?" At the same time contradicting his assertion by displaying his own, of which, on account of their whiteness and regularity, he was inordinately vain.

Editor's Specials.

"Write the Vision and make it plain."

OUR COMPILATIONS.

READ with care those in our present number. The control of hemorrhage is one of the very important things in dental practice, and often it is found a difficult task. Some of the strongest men and women to be found, bleed excessively from but slight cuts or scratches. Sometimes the hemorrhagic tendency affects a whole family. Sometimes but a single individual in a family is hemorrhagic; and we have seen cases where that one was the strongest and apparently the most healthy of all the household.

Hemorrhage, after extraction, is often very annoying to the dentist; for let the cause be as it may, he comes in for the blame and the curses. And usually the "seventh-son blood-stoppers," and all the quacks in the patient's vicinity, have exhausted their powers and skill before the dentist is notified. And even then, he is sometimes annoyed and interrupted in his treatment by the "family physician," in the shape of an ignorant empiric. Unfortunately, in most of the dangerous cases, no unusual bleeding occurs for several hours after the operation. Reaction results, and the bleeding begins. Or the menstrual period is reached, and vicarious hemorrhage occurs, which usually is not dangerous; but the patient and friends become so frightened, that it is very important to avoid such mishaps when possible.

The hæmostatic powers of the common ragweed ought to be more generally known. The medicine is readily obtained, as the weed (*Ambrosia Artemisiæfolia*) abounds throughout our country.

In many, indeed in most of the cases of bleeding after extraction, local measures will accomplish all that is needed; but in many, they will not. As constitutional remedies, we have often used opium and acetate of lead, in combination; the peroxide, or perchloride of iron, ergot, etc.; but we have faith in the ragweed treatment, and would give it a thorough trial, if opportunity should present, with a feeling of joy that the abominable weed,

after all, has its uses. But read the article carefully. A mis-managed case of hemorrhage is very expensive, as well as annoying to the dentist.

The accompanying article on DISINFECTION requires, and will repay the most careful and thorough study. The reader who gives it such attention will not make himself ridiculous at our associations by showing that he does not know even the meaning of disinfection, and especially he will not claim that the man who advises the use of disinfectants, or antiseptics, thereby recognizes the germ theory of decay, to the exclusion of chemical action.

In speaking of the disinfecting power of the hypochlorites of sodium, and calcium, if we understand the writer, his thought is not quite clear. One of these hypochlorites is known in commerce as Labarraque's Solution, and the other as chloride of lime. We think their disinfecting (and bleaching) properties are easily explained.

Hypochlorous acid is composed of one atom each of oxygen and chlorine. These elements are both so highly electro-negative that they are held by a very feeble affinity—so feeble that they separate unless assisted by combination with a base, as soda and lime, in the salts now considered. The carbonic acid of the atmosphere, or almost any acid, takes the base and thus sets free the hypochlorous acid, when its components separate, and then we have an atom each of oxygen and chlorine, and both nascent. Hence the energetic and extensive disinfection is easily explained. The one element accomplishes exactly as much as the other. It is well known that, in this state, both these elements take hydrogen from almost any compound containing it. The chlorine, in so uniting, forms hydrochloric acid, and it takes hold of alkalies and alkaloids, and hence another step in disinfection is taken; and all this chemical action will take place as certainly as the reagents are brought together, whether germs are killed or not.

The following letter, from an esteemed professional friend, explains itself. Not sure that he allows us to publish it, his name is erased. We thought we had said enough, but his judgment is often better than ours.—ED.

ED. JOURNAL :—Please state once more your theory of the benefit of fruit acids, pickles, etc. as food, (for young girls especially), to build up a firm osseous system, dense teeth, etc. I can

not find what you have already written on the subject, and consider it one that can not be too often brought to the attention of the profession. People in this locality often remark that their teeth are bad because they use so much citrous fruits. I tell them, as nearly as I can, of your theory, and also that their teeth are *not* nearly so sensitive as those in the central-western states. This may be partly due to the great amount of exposure to sunlight, open air life, plain living, or some influence of climate. You know the dentist learns more about the *real* condition of his patients' nervous systems than does the average physician. I never before saw a class of patients so easily managed, as far as all nervous considerations are concerned, as in this sunny, breezy land of South Florida. While they have a very small proportion of exposed pulps, pulpless teeth, diseased gums, etc., as compared with Indiana, Missouri, and neighboring states, the cases encountered are easily cured. These features were so evident as to attract my attention the first week I operated in this locality. But I have waited nearly two years to say anything about it, where it might get into print. I wished to be sure I was not mistaken.

Respectfully, D.

BRAIDENTOWN, FLA.

REMARKS.—The change from youth to puberty is a serious one, and is often attended by serious results. In many cases there are great constitutional disturbances; and as the change is more abrupt with the female than with the male sex, the girls are more likely to suffer than the boys. Besides, the girls are debarred from fresh air, sunshine, and outdoor exercise, to an extent that would result in riot and rebellion if enjoined on the boys. And polite society does not demand that boys must be buried in boarding-schools, to bleach the health out of them, as is done with girls and celery plants. In fashionable communities the foremost and prevalent thought is how to secure desirable marriages for the daughters; and to bring these about, they usually put the girls through a course of educational training that unfits them for either marriage or motherhood. And by the time each one of them, fortunate if mated to a boy superior to herself, has brought forth one or two pitiful specimens of depreciated humanity, her powers of procreation are exhausted, and physical distress and mental anxiety are hers the rest of her life. Brethren, these things ought not so to be; yet they are, and, as dentists, we can

do little to prevent. But we must do that little, or we become verily guilty.

It is well known that the approach to adult life is the period of greatest danger to the teeth, as far as they are endangered by dental caries. The teeth are yet soft; and other organs and functions demand and take both nutritive and neural forces of the system, that have been spared for the benefit of the teeth in earlier years, and that may be again so spared, if the teeth can be preserved through the critical years.

The constitutional condition that we have heretofore proposed to relieve, in part by using vegetable or mineral acids, is not confined to school-girls, nor even to the one sex; yet, as it is much more common with these than with others, let the blue-eyed, light-haired, pretty Miss Bland Katie Blank, of Shady Bank Boarding School, be taken as a specimen of the class.

Miss Katie has reached fourteen, and appears to be a well-grown, sprightly, cheerful girl. Her mother calls a council of her own maiden sisters, and Miss Tartaria Gossipitate to decide on changing the shape of the God-given form of Miss Katie, by the celestial system of tight-lacing, to fit her for the boarding school. Change of diet, of air, of hours for sleep, etc., added to the rapidly progressing physiological changes, soon show their effect on poor Katie. Her skin and mucous membrane relax. Her blood becomes impoverished, assimilation is defective, as is also digestion. Her lips become pale, or assume a dark tinge from passive congestion. The kisses she gives her mother are soft and flabby; and those given to John Henry are—well, it is not your business to know or care what they are like. She has a right to kiss her little brother, if he is willing.

By this time her breath is offensive, loaded with fumes of ammonia, generally in combination with phosphuretted, or sulphuretted hydrogen, and hence is, and from the same causes, as disagreeable as a rotten egg. And now she gets no kisses except from her mother—not even from John Henry, unless that other fellow happens to have been named for her little brother. In all this side talk we are trying to impress on the reader the exceeding offensiveness of this combination, or mixture of foreign matters with the breath.

The constitutional and local poisons and irritants producing this state of affairs, impoverish the blood, relax the mucous mem-

brane, and deprave its functions, and also the functions of the salivary glands and mucous follicles. The tongue becomes furrowed and flabby, and usually enlarged. Often the papillæ are red and elevated or prominent. Aphthous ulcers are often seen. The free margins of the gums become swollen and relaxed, suggesting, in some cases, mild mercurial pyalism. The buccal fluids are usually adhesive—*ropy*, as Prof. Taft calls the condition; and often, at this state, they show an alkaline reaction, the alkalinity being, in most cases, if not in all, due to the presence of ammonia.

Ammonia, or its carbonate, (and the same is true of potassa and soda), will precipitate the lime-salts from the buccal fluids; and this it does by taking, through combination, the free carbonic acid from these fluids. Possibly the young will understand and remember this by a familiar illustration. It is found inconvenient to wash, or even to cook with "hard water." The water is called hard because it has carbonate of lime dissolved in it. But this carbonate is very slightly soluble in pure water. Any one can verify this by trying to dissolve chalk or marble dust in distilled water. But when the water is saturated with carbonic acid, (ordinarily a gas), it dissolves this lime salt readily. If in this condition the water is heated, the acid is driven off, and the carbonate is deposited on the sides of the vessel. Subphosphate of lime is held in solution in the same way. The buccal fluids, when normal, hold both these salts in solution; but when anything takes from them their free carbonic acid, the salts are precipitated as tartar.

But we must not forget Miss Katie. She had been duly bandaged and primped, and imprisoned in the boarding school. And there she has been begging for, if not stealing acid diet and relishes, but still failing to receive an adequate supply. The proprietor, inspired by his purse strings, tells her that pickles are not wholesome. Her mother sends her a pickle, on the sly, and she is caught eating it. Her classmates join in a shout that Katie's in love. Pickles are good for love. Let's all bring her pickles—no—gooseberries, suggests Jennie Sourgrass; for her other John Henry is a regular gosling. And so, to avoid such persecutions, Miss Katie settles back to albuminous food.

All these ridiculous illustrations are to aid the memory; and now, for the treatment:

The whole system should be toned up; and all local irritants should be removed, and the parts disinfected, while antiseptics, both local and constitutional should be used.

Acid fruits, such as strawberry, raspberry, blackberry, etc., are excellent, but should be taken at the regular meals. Any digestible sour fruit answers a good purpose. The mineral acids (so-called) are sometimes important, especially when the liver is torpid.

Aromatic sulphuric acid, often called elixir vitriol, may be administered in doses of ten to sixteen drops, after eating.

But good vinegar will answer quite as well—as well as lemonade or other fancy drink. One or two teaspoonfuls of vinegar in sweetened water, may be taken three times a day. Of course, the general health must be looked after.

The constitutional conditions roughly sketched above are indications of approaching white decay; and often the dentists fail to realize this, because the fluids of the mouth are apt to show an alkaline reaction. But if the chemico-vital theory of decay is correct, the action is readily explained by the oxidation of ammonia.

And this condition, as above described, is the corner stone of the foundation for *pyorrhea alveolaris*. Bear in mind that not only the mucous membrane, but all fibro-membranous textures are debilitated, if not depraved. The *cementum* is not duly nourished by its investing membrane; the *alveoli* are no better supplied, and hence the teeth become loosened in their sockets, partly from want of proper nutrition, and partly because the blood-vessels of the parts have lost tone, and cannot eject their contents, and congestion is established, to be followed by inflammation, unless this is forestalled by resolution. But to follow out this line of thought would prove exhaustive.

POWER OF SYMPATHY (?)

At the last meeting of the French Academy of Medicine, Dr. Brown-Sequard related a very remarkable instance of the power of sympathy which came within his recent observation. A little girl was looking out of a window of a house in the Batignolles a few days ago. The lower sash was raised and the child had placed her arms on the sill. Suddenly the support on which the sash rested gave way and the window fell with considerable force on the

little girl's arms, inflicting a severe bruise. Her mother, who was in the room at the time, happened to look toward the window at the moment of the accident and witnessed it. She fainted with fright and remained insensible a minute or two. When she recovered she was conscious of a severe pain in both arms, and on examining the seat of it she was amazed to find on each arm a bruise corresponding in position to that left on the child's, though more extensive. Coming from a less accredited source, such a story would only provoke a smile of incredulity, but Dr. Brown-Sequard has such position in the world of science that it does not permit of this summary mode of disposing of a statement for which he vouches.—*St. James Gazette*.

If the above rested on the observation and statement of Bill Buncome it would be regarded as of no more value than a repudiated bill; but wouldn't we like to see a certified copy of the minutes of the French Academy?

Riding with an older brother many years ago, he said in a serious tone, "Did you ever see anything so remarkable that you were afraid to tell of it?" We replied, "Yes." "Where?" said he. "In that meadow," we replied. "When?" said he. "Last fall," we replied. "We're together," said he, and so it proved. Strange things do occur; and things stranger still may come to pass. While trying to avoid over-credulity we must sometimes give credit to the statements of others, even though they seem improbable. If we believe only that which we have seen, and which we can explain, our creed will be a very short one.

We hear of the nervous temperament. This is sometimes so highly developed that it might well be called the *neuralgic* temperament. An experienced physician, so constituted, states that when listening to the details of suffering by a patient enduring local pains, he suffers corresponding pain at every point mentioned. The physiology of sympathy is not yet understood.

STATE DENTAL SOCIETY.

DON'T forget the meeting at Chillicothe. And that is not the main part of the admonition. The revised edition adds, don't neglect it. Be there, on time, too, and with a paper to read, on some professional subject, scientific or practical, as you see fit,—both, if you can make such a fortunate combination; and two papers, if you are opposed to mixtures, will be acceptable, if well gotten up, as you can prepare them. And don't for a moment

excuse yourself because you are not one of the "charter members." If a charter was to be obtained for re-organization, it seemed necessary to act before the members of the old society and visiting dentists left for home; hence it was not practicable to get all together on such short notice. Some were absent whose presence was greatly desired; and it is possible that some who would have desired to attend, were not notified. If you regard yourself as worthy of membership, it is quite probable you will find that others regard you in the same light. At all events, if you neglect to attend, and to give your advice and influence in the reorganization you will have only yourself to blame if the work is not satisfactorily done. Don't work yourself into a suspicion that you are not wanted. When a small boy we heard one Scotch elder say to another, "Hi! Jamie, ye were na' at the kirk last nicht?" "Nay, Tam, I kenned a row was on han', an' providentially kep, mysel' awa'," was the reply. We trust no reader of the JOURNAL will copy the conduct of Jamie, for no row is on hand.

We are daily expecting the program, and still hope to receive it before going to press; but you need not be tied by a program, if you have anything interesting to set forth.

SYMPATHY.

IN the news of the terrible tornado at Washington C. H., Ohio, we find that our very special friend, a comrade in the army, and our neighbor in his boyhood, Dr. E. C. Hamilton, has received a severe but not serious wound. While sympathizing with his suffering, we rejoice that his life is spared.

Societies.

"Wherewith one may edify another."

CONNECTICUT VALLEY DENTAL SOCIETY.

THE twenty-second annual meeting will be held in Springfield, Mass., Thursday and Friday November 5th and 6th, 1885.

The program as already arranged includes a number of interesting papers and reports, indicating that this will be one of the instructive meetings of the year. A cordial invitation is extended to all dentists to attend.

In order to obtain reliable statistics in regard to artificial dentures, this society sent out last January over one thousand blank forms to as many dentists. All having these blanks are requested to *return them at once* that a report from them may be presented at this meeting.

GEO. A. MAXFIELD, *Sec'y*,
Holyoke, Mass.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

THE National Association of Dental Examiners held its fourth session in Curtiss Hall, Minneapolis, Minn., commencing Tuesday, August 4, 1885. President J. Taft in the chair.

The following State boards were represented, the four last named being new members: Ohio, by J. Taft and H. A. Smith; Illinois, by Geo. H. Cushing, A. W. Harlan, and C. A. Kitchen; Pennsylvania, by E. T. Darby; Maryland, by T. S. Waters; Michigan, by G. R. Thomas and A. T. Metcalf; Louisiana, by Joseph Bauer; Indiana, by S. B. Brown; Iowa, by W. P. Dickinson, J. T. Abbott, J. Hardman, J. F. Sanborn, and E. E. Hughes; Dakota, by S. J. Hill; Kansas, by L. C. Wasson and Wm. Shirley; Wisconsin, by Edgar Palmer, C. C. Chittenden, B. G. Marcklein, E. C. French, and J. S. Reynolds; Minnesota, by S. T. Clements and G. V. I. Brown.

The following boards belonging to the association were not present: Vermont, New Jersey, Georgia, West Virginia, Mississippi, South Carolina, and Kentucky.

The following resolutions were adopted:

Resolved, That this association most earnestly commends the action of the Wisconsin and other State Boards of Dental Examiners, in refusing to accept the diplomas of the so-called Wisconsin Dental College located at Delavan, on the ground that it is not a reputable school, and recommends to all State boards to which the diplomas of that institution shall be offered that they likewise refuse them.

Resolved, As the sense of this association, that persons engaged in the study of dentistry and physicians practicing as such should not be considered eligible to registration as dentists.

Resolved. That this association recommends that all applicants holding diplomas from the Royal College of Dental Surgeons of Ontario be required to submit to examination before they are granted license to practice.

WHEREAS, The dental law of the State of Maryland seems to be restrictive in its character; it is the sense of this body that the dental profession of said State of Maryland should, at the next session of its Legislature, seek to cause said dental law to be so amended as to be in harmony with the dental laws of the other States.

Resolved. That the secretary be instructed to forward a copy of the above resolution to the State Board of Dental Examiners of Maryland.

Resolved. That this association recommend all State Boards not to grant temporary licenses to first-course students, or any others, unless fully satisfied that such applicants have had at least two years of practical clinical instruction. Such applicants shall pass as well a proper theoretical examination.

The following officers were then elected for the ensuing year: J. Taft, president; T. S. Waters, vice-president; George H. Cushing, secretary and treasurer.

Adjourned to meet at the place to be selected for the next meeting of the American Dental Association, on the Monday preceding the meeting of that body.

TO THE DENTISTS OF CENTRAL ILLINOIS.

YOU are all once more cordially invited to be present at a meeting of the Central Illinois Dental Society, at Bloomington, October 13, 1885.

This society has prospered and exerted an influence far beyond the expectations of those who organized it three years ago. Its sole mission is to do good—to be of use to all those within the reach of its influence. There is nothing narrow or exclusive in its plan or scope. We recognize as eligible to membership all dentists in legal practice, and esteemed as respectable men in the communities where they live. We want to help every such man, and we want every such man's help. No dentist within reaching distance can afford to stay away from our meetings.

The best practitioners in the country will say that the influence of societies has been the greatest to make them what they are. Local societies afford the opportunity, and the only opportunity often, for neighboring practitioners to become acquainted. In this way prejudice is disarmed, mutual understanding and confidence established. The benefits extend not only to dentists

themselves, but the community at large, the intelligent members of which soon learn to distinguish between progressive and non-progressive men.

The meetings of our Central Illinois Society afford opportunity for those isolated locations to meet and get acquainted with prominent men, noted operators, teachers and professors, some of whom we always have with us as visitors and co-workers. This, in itself, is an educational item of no small importance.

Experience proves that associations of men in the same kind of work is a necessity of growth. Lone trees are usually dwarfs. One thing more. Make your arrangements to come early. The very first part is often the best. Take your appointment book and cross off all the time for the meeting, with time to go and come, so you can be present at roll-call and adjournment. Then stick to that appointment. Don't let anything get any of that time. If you attend the meeting from beginning to end it will be the best investment of time and money you can make. It will pay, not only in satisfaction and knowledge, but in the end pay principal and big interest in cash, as the natural result of the dentist's own improvement. Come one, come all. Be free, be sociable, come with questions for the society to answer, and incidents of practice. At any rate *come*.

CLINICS.

1. Dr. A. S. Waltz, Decatur. (Artificial Crown.)
2. Dr. J. Campbell, Bloomington. (Gold Filling with Pneumatic Plugger.)
3. Dr. J. W. Wassall, Chicago. (Root-filling with Gutta-Percha.)
4. Dr. E. B. Call, Peoria. (Filling. Watts' Crystal Gold.)
5. Dr. E. D. Swain, Chicago. (Platinum-Gold Filling. Incisor Edge.)
6. Dr. S. W. Lakin, Eureka. (Gold Filling. Lower Bicuspid or Molar. Post. Proximal Cavity. Right Angle. Holmes' Plugger.)
7. LABORATORY CLINICS. I. Sharpening Dental Engine Burs. II. Tempering Instruments. III. Dr. Ames, of Chicago, will illustrate his method of applying the principle of atmospheric pressure, with full upper sets. (This will be very interesting and practical.)

SUBJECTS FOR DISCUSSION.

I DENTAL LITERATURE. Hints on Dental Reading. Essay. DR. S. W. LAKIN.

II DENTAL MATERIA MEDICA. Old and New Remedies. Essay. DR. A. W. HARLAN.

III DENTAL IRREGULARITIES. The Wire Spring Principle. Essay. DR. GARRETT NEWKIRK.

IV NOTES ON OPERATIVE DENTISTRY. Essay. DR. H. H. TOWNSEND.

V AMALGAMS AND CEMENTS. Their values and places. Discussion opened by DR. G. D. SITHERWOOD.

VI WHAT PRACTICAL VALUE IS THERE IN THE PRINCIPLE OF BRIDGE-WORK, SO-CALLED? Discussion opened by DR. E. NOYES or DR. L. P. HASKELL.

OHIO STATE DENTAL SOCIETY.

SUBJECTS FOR DISCUSSION.

1. Beneficial Results of Associate Effort. Paper by Prof. J. Taft, M.D., D.D.S.

2. Observations on Causes, and the nature of Pyorrhœa Alveolaris. Papers by Prof's A. O. Rawls, D.D.S., and A. W. Harlan, M.D., D.D.S.

3. Filling Teeth by Rotary Pressure—Herr Wm. Herbst's method. Demonstrated by Dr. Boedecker of New York.

4. Geographical Distribution of Caries. Paper by E. G. Betty, D.D.S.

5. What should be the Treatment in Cases of Impacted Third Molars? Paper by Dr. C. R. Butler.

The first annual meeting of the Ohio State Dental Society (as reorganized) will be held at Chillicothe commencing on the last Wednesday of October, 1885.

Efforts are being made to make this meeting of more than ordinary interest. Let every member assist, not only by his presence and a paper on some topic of interest, but by bringing with him some member of the profession whom he can recommend for membership.

The consideration of important legislation the coming winter will occupy some of the time of the session.

J. R. CALLAHAN, *Sec'y*,
Hillsboro.

C. H. JAMES, *Pres't*,
Cincinnati.

OHIO STATE JOURNAL

—OF—
DENTAL SCIENCE.

VOL. V.

NOVEMBER 1, 1885.

No. 11.

Contributions.

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"A word fitly spoken is like apples of gold."—SOLOMON.
—

ANATOMY.

—
BY WM. KNIGHT, M.D., PROFESSOR OF ANATOMY.
—

[Opening Lecture of the 40th Annual Session of the Ohio College of Dental Surgery, Cincinnati.]

THERE is now no longer any question that dentistry is to be ranked among what are called learned professions. The educated dentist stands upon a plane far above the ancient tooth-extractor or tooth-filler. The progress of dentistry has kept, and is keeping place with the progress of other sciences. The pathway of your profession is broadening; it is advancing into richer fields, and it promises to the honest and zealous toilers, greater harvests than ever before.

It has thus become necessary that your studies be more thorough and liberal. To see is not to know. The nurse in a hospital sees much of sickness. But what does she know of disease? Nothing. And why? For the reason that she never labored in acquiring the principles of medicine. To her the cause and sequence of disease are as a closed book; and so will most questions be to you in your science, unless, with zealous and faithful

endeavor, you master the several studies of your profession. They combine in teaching you how and what to observe. On this plan only can you ever expect to become practical and useful practitioners. You have to learn to love your profession, not for its emoluments alone, but for its own sake.

The chief among your studies, and underlying them, anatomy takes its rank. To become masters of this far-reaching science, would be almost impossible in one life-time; to become perfect in one of its numerous branches is more than any one of you are likely to accomplish. But it is essential that you should be proficient, at least in some of the details of human anatomy. For without this knowledge, you will ever be bewildered in practicing your profession. You can have no intelligent conception of caries of a bone or of a tooth, no idea of an abscess or even of a gum-boil, if you be ignorant of the teachings of this science. The growth of this branch of learning has been slow; and its history extends back to the centuries. That anatomy had its birth with the earliest dawn of sciences can not be disputed. Indeed it is the only door-way to the knowledge of many kindred sciences.

But let us step at once from the misty shadows of uncertainty which surrounded the arts with fables and allegories, into the Hippocratic period of medicine. There were seven individuals of the family Heracleidæ who bore the name Hippocrates; but the most celebrated of all was the second in this range. His birth goes back as far as the year 460 before the christian era. His early youth was spent in travel in foreign lands; and on his return to his native country he produced those immortal works that astonished the world, and made the physical science of man one of the most important branches of natural philosophy. Of the numerous works which have been ascribed to Hippocrates, five only are genuine, and of these, not one is devoted to anatomy. Consequently we must gather from his medical and surgical instructions the proofs of what was his knowledge of this science. From these it would appear that Hippocrates had some accurate knowledge of osteology, and of the structure and nature of joints. But of the muscles, of the soft parts in general, and of the internal organs, his ideas are confused and erroneous. The muscles are regarded as simply for the purpose of covering the bones. The tendons, the ligaments, and the membranes are all regarded as

analagous organs. The arteries and veins are generally confounded. The brain is regarded by him as a gland that secretes a viscid fluid. These crude errors would show that Hippocrates could never have made dissections, as we understand them. That his knowledge of osteology was more exact can be explained by a tradition which says: that the Asclepiadæ, of Cos, kept in their school, a human skeleton for the instruction of their pupils. Hippocrates, by the study of this specimen, gathered his knowledge of the bones.

A rather fanciful arrangement of the blood-vessels was described in the year 363, by Polybus, a brother-in-law of Hippocrates. He was a recluse, devoting his time to the study of anatomy and physiology. He represents that the vessels of the body consists of four pairs, the first proceeding from the heart, and back of the neck to the hips, lower extremities, and outer ankle; the second consisting of the jugular vessels, proceeding to the loins, thigh and inner ankle; the third, proceeding from the temples to the scapula and lungs, and thus by mutual intercrossing to the spleen and left kidney, and the liver and right kidney; and the fourth, from the fore part of the neck to the upper extremities, and the fore part of the trunk. This may be taken as a specimen of the anatomical knowledge of one of the most illustrious of the Hippocratic disciples, and may be admitted as representing the state of anatomical science among the most enlightened men of that time.

About this period, however, an infant was born, who was destined to throw a flood of light, not only upon the science of anatomy, but upon all other known subjects. This was Aristotle, the ardent and original naturalist. He was born in the year 384 before the christian era, and it has been truthfully said of him, that he was the founder of comparative anatomy. Philip, of Macedonia, wishing to find a preceptor to his son Alexander, fixed his choice upon Aristotle. This was a most fortunate selection, for it not only gave to Alexander, then a youth of fourteen, the companionship of a genius, who enthused him with a love for learning that he never afterwards lost, but it led to a friendship between master and pupil that bore great results. It was owing to this friendship and love of science, which Aristotle had awakened in his royal pupil, that the first known museum of natural history had its origin. From the interior of that vast and then little known continent of Asia, Alexander, though engaged in his

huge military operations, found time to make large collections of animals and plants, which he transmitted to the old preceptor, and his munificence in furnishing him money was almost unlimited. From the rich stores thus gathered, Aristotle created that great monument of facts, now known as *Aristotelian Anatomy*. From this we learn that Aristotle corrected the erroneous statements regarding the blood vessels, given by Polybus, which he made, as we have seen, to arise from the head and neck. These Aristotle represents as being two in number, placed before the spinal column, the larger on the right, the smaller which, he says, is called *aorta* on the left. Both, he states, arise from the heart; and he distinguishes the thick and firm structure of the *aorta* from the thin and membranous structure of the vein. His account of the distribution of the *aorta* is strikingly correct. It is singular, however, that though he remarks particularly that the renal branches go to the substance, and not to the pelvis of the kidney, he mistakes the ureters for branches of the *aorta*. He gives a good description of the heart, yet, though he represents it as full of blood, and the source and fountain of that fluid, and even speaks of the blood flowing from the heart to the veins, and thence to every part of the body, he says nothing of the circular motion of that fluid. With the liver and spleen, and the whole alimentary canal, he seems well acquainted. He distinguishes the several parts of the quadruple stomach of ruminating animals, and even traces the relations between the teeth and the several forms of stomachs. His description of the brain is more extended than any given up to his time. The following are his remarks: "That which is first found, in opening the head, is the brain; and it is placed in the anterior part. The brain is enveloped in two membranes; that nearest the cranium is the strongest, the other which rests immediately upon it, is weaker. The brain is always composed of two lobes independent of the cerebellum, which lies beneath, and whose form and structure differ from those of the brain. There is usually a cavity in the middle of the mass of the brain; its substance is naturally cold to the touch, and neither veins nor blood is ever found in its interior; but the membrane which envelopes it is full of veins." Next in time of anatomists is *Praxagorus*, who is remarkable for being the first who distinguishes the arteries from the veins, and the originator of the opinion that the former contained air.

Hitherto anatomical inquiries had been confined to the dis-

section of brute animals. But now, 320 years before the christian era, an event occurred that was the means of bringing together the scattered embers of literature and science, that were beginning to languish in Greece. This event was the foundation of the Ptolemaic dynasty of sovereigns. Under the patronage and zeal of these liberal rulers, the Alexandrian school flourished; and among the numerous sciences protected and cultivated at this school, none received more attention than that of medicine. Indeed so celebrated in this particular did this seat of learning become, that in the time of Galen, it sufficed to have studied in that city, or even to have resided there for a time, to obtain the reputation of a physician.

The success in the cultivation of medicine, in the Alexandrian institute, was due to several causes, chief among which must be placed the authorization accorded by the founders of that establishment, for the dissection of the human body. The most eminent of the anatomists of that day, who enjoyed this privilege, were Herophilus and Erasistratus, who are said to be the first two physicians that ever dissected the human subject. Certainly they were the first to possess uninterrupted facilities for making such dissections, and were thus able to correct many of the errors of their predecessors. But unfortunately their writings were all destroyed in the burning of the great library of Alexandria, by Julius Cæsar; and we know of them only by the fragments which have been preserved in the writings of others. From these we learn that Erasistratus named the valves of the heart tricuspid and sigmoid. That he studied, particularly, the shape and structure of the brain, that he first formed a distinct idea of the nature of the nerves, those of sensation and motion; and that he discovered the lymphatic vessels of the mesentery. Herophilus was a most zealous dissector. He appears to have given special attention to those parts which were the least understood. He recognized the nature of the pulmonary artery, which he denominated arterious vein. He knew the vessels of the mesentery, and showed that they did not go to the *venæ portæ*. He first applied the name choroid or vascular membrane to that which is found in the cerebral ventricles. He knew the straight venous sinus, which still bears his name; and to him the furrow at the bottom of the fourth ventricle is indebted for its name of *calamus scriptorius*.

The lustre of these anatomists appears, for a long time to

have thrown into the shade the names of all other investigators of this science. For among the numerous and rather celebrated successors in the Alexandrian school, it is impossible, in the history of anatomy, to recognize one that is entitled to distinction. There is consequently a wide chasm extending from their time to the age of Galen, a period of nearly 450 years.

The most valuable depository of the anatomical knowledge of this period, are the writings of Celsus. He left no work upon anatomy, but from his medical books can be gathered what was then known of this science. Osteology seems to have made some progress; for Celsus enumerates the sutures, and several of the holes of the cranium, and describes, at great length, the superior and inferior maxillary bones and the teeth. He had formed a just idea of the articular connections, and was desirous to impress the fact that none is found without cartilage. From his mention of many minute holes in the recesses of the nasal cavities, it is evident that he was acquainted with the perforated plate of the ethmoid bone, and from saying that the straight part of the auditory canal becomes flexuous, and terminates in numerous minute cavities, it is inferred, by Portal, that he knew the semi-lunar canals.

At length, in the year 131 of the christian era, was born the celebrated Galen. He revised and systematised anatomical knowledge to an astonishing degree, but without the advantage which his great predecessors had enjoyed of dissecting the human body, so that many of his descriptions are taken from the inferior animals. We have several works of his which treat especially of the subjects of anatomy. First a monograph, in which he recommends that the bones be not studied in books alone, but that they be seen and handled; and to do that, he advises the student to go to Alexandria, where the professors, he says, will place before him the human skeleton. This advice of Galen proves that, in his time, there was not in Rome a single skeleton on which to demonstrate osteology. Secondly, a complete treatise on anatomy, divided into fifteen books. Thirdly, an anatomo-physiological treatise on the functions of the regions of the human body, distributed in seventeen books; and finally a quantity of anatomical details, scattered in various writings, which relate to other subjects.

His osteology is the most perfect of the ancients. He names

and distinguishes the bones of the cranium, nearly in the same manner as at present. He gave the first clear account of the vertebræ, which he divides into cervical, dorsal and lumbar, and distinguishes from the sacrum and coccyx. Though in myology Galen appears to less advantage than in osteology, he nevertheless carried this part of anatomical knowledge to greater perfection than any of his predecessors. After speaking of the muscles that move the head and lower jaw, he adverts to those by which the windpipe is opened and shut. In so doing he shows that the muscles were no longer regarded as inert masses, simply to cover the bones. Then follows a description of the muscles of the tongue, pharynx and neck, those of the upper extremities, trunk and lower extremities successively; and in the course of this description, he swerves so little from the actual facts, that most of the names by which he distinguishes the principle muscles have been retained by the best modern anatomists. He remains ignorant, however, of the separate uses of the arteries and veins. Though in opposition to the prevailing opinion, he proved that in the living animal, the arteries contained not air but blood. Indeed, he devotes an entire book to refute the old opinion, sustaining himself upon the observation, that at all times, when an artery is wounded, the blood gushes out. Still it did not occur to him to determine in what direction the blood flowed, or whether it was movable or stationary. His descriptions of the brain and the thoracic and abdominal cavities, are very much in advance of any previously given. The progress thus made, in this so-called anatomical period, was immense; and when we consider that the greater part of it was effected in the first two centuries of the foundation of the Alexandrian school, and that it was due chiefly to the labors of Herophilus and Erasistratus, we are astonished at the rapid developments, as well as happy direction that these two great men gave to anatomical studies. Galen is more to be considered as the rectifier and digester of the science of anatomy among the ancients. His language is in general, clear. Few passages in early sciences are indeed so interesting as the description of the process for demonstrating the brain, which is given by this patient and enthusiastic anatomist.

The death of Galen, which occurred in the 90th year of his age, and the 193rd of the christian era, may be regarded as the waning of anatomical research. Two names occur of any celeb-

riety in the history of anatomy, from the death of Galen to the revival of learning, toward the close of the 13th century. These are Soranus and Aribasius. The former distinguished himself by his researches into the organs of generation. The latter was the friend and physician of the Emperor Julian, and contributed to elevate that apostate to the imperial throne. His claims for renown rest in a good account of the salivary glands which were overlooked by Galen. His reverence for Galen was so great, and he adopted so blindly all of his theories, that he has been sur-named the ape of Galen.

The time had now arrived when the Greek and Roman learning was to be overshadowed by the barbarians of the northern nations, and the seat of science was to be transferred to Arabia. This was occasioned by the Saracenic invasion of Southern Europe, and the destruction for the second time of the Alexandrian library.

Notwithstanding the efforts of the Arabian princes in behalf of learning, little was done for anatomy during the Arabic period, for the Arabian physicians limited themselves, as far as anatomical science was concerned, in translating and commenting upon their Greek Authorities, and, in nearly all instances, their translations are mystified by the inflated imagery of the Arabian writers. To none of their original works can the historian, with justice, ascribe any anatomical merit. No doubt the Koran was largely at fault, that this science retrograded during this period. Its peculiar fanaticism made it a sacrilege for any one to touch a corpse. The chief reason the Arabians obtain a place in anatomical history, is that by the influence which their medical authority enabled them to exercise in the European schools, the nomenclature which they employed was adopted by the European anatomists, and continued until the revival of ancient learning restored the original nomenclature of the Greek physicians.

In this sweeping denouncement of the Arabian anatomists, the name of Abdallatif should be excepted. He, at great risk, studied the human bones, at the cemeteries, and ascertained that the lower jaw is formed by one piece, and that the sacrum, though sometimes composed of several, is most generally of one. In these particulars, he corrected the mistakes of Galen.

The period of Arabic learning extends to the opening of the

14th century, and after this we begin to approach happier times. The University of Bologna now began to be distinguished for its medical teachers, and was rapidly succeeded by those of Padua and Naples. In 1315 Mondino, the father of modern anatomy, taught in the University of Bologna, and quickly drew the interest of the medical profession by his demonstrations of the human body. In this same year he displayed the parts of the human body in two female subjects. At this era, and still for a long time after, it was the custom to demonstrate anatomy on hogs and other animals, and it was great boldness, on the part of Mondino, to apply the knife on the human body. The prejudice against dissections of the human subject was so general, for more than a century afterwards, that no one dared renew, at least ostensibly, the undertaking of the Bolognese professor. His own conscience did not seem to be well satisfied by the operation, since he was not willing to open the head, for fear of committing a mortal sin. Mondino's descriptions are corrupted by the barbarous leaven of the Arabian school. He divides the body into three cavities, the upper containing the animal members, as the head; the lower containing the natural members; and the middle containing the spiritual members. The peritoneum he describes under the name siphac, the omentum under that of zirbus, in imitation of the Arabians. His anatomy of the heart is wonderfully exact; and it is a remarkable fact, which seems to be omitted by all subsequent authors, that his description contains the rudiments of the circulation of the blood. The merit of this distinction, however, he afterwards destroys by repeating the old assertion, that the left ventricle ought to contain spirit, or air, which it generates from the blood. In his account of the cerebral membranes, he notices the principal characters of the *dura mater*. He describes, shortly, the lateral ventricles, with their anterior and posterior cornua; and the choroid plexus, as a blood red substance, like a large worm. He then speaks of the third ventricle, and one posterior, which seems to correspond to the fourth; and he also describes the *infundibulum*.

His pupil and commentator, Alexander Achillini, became eminent for his discoveries of cerebral anatomy. He was also the first who described the two tympanal bones, termed malleus and incus. He does not, however, seem to have known of the *stapes*. Shortly after him, at the beginning of the 16th century,

James Berenger flourished at Bologna. He will be remembered as one of the most zealous and eminent among the cultivators of anatomy. His industry was indefatigable; and he declares that he dissected over one hundred human bodies. He is the first who undertakes a systematic view of the several textures of which the human body is composed, and, in a preliminary commentary, he treats of the anatomical characters and properties of fat, of membrane in general, of flesh, of nerve, of tendon, and of muscle. He then proceeds to describe, with much accuracy, the muscles of the abdomen, and illustrates their site and connections by wood-cuts, which, though crude and spirited, show that anatomical drawing was, in that early age, beginning to be understood. In his account of the intestines, he is the first who mentions the vermiform process of the cœcum; he remarks the yellow tint communicated to the duodenum by the gall bladder. He was the first to recognize the larger proportional size of the chest in the male than in the female, and conversely, the greater capacity of the female than of the male pelvis. In the larynx he discovered the arytenoid cartilages. He gave the first good description of the thymus, distinguished the oblique situation of the heart, describes the pericardium, and maintains the uniform presence of the pericardial fluid. He then describes the cavities of the heart, but perplexes himself, as did all the anatomists of that age, about the spirit it was supposed to contain. He enumerates the tunics and humors of the eye, and gives an account of the internal ear.

Italy long retained the distinction of giving birth to the first eminent authority in Europe, and the glory she acquired in the names of Mondino and Berenger was destined to become more conspicuous in the labors of Fallopius and Eustachius.

The sixteenth century had fully commenced before the schools of France began to acquire anatomical distinction in the names of Dubois, Fernel and Etienne. Dubois, who occupied the chair of anatomy in the University of Paris for forty years, seems more distinguished as being the teacher of Vesalius than in having advanced the knowledge of his art. The footsteps and blunders of Galen blindly followed, bound him to the past. Etienne, however, won renown by his original researches, which led to his discovering and demonstrating a canal running through the entire length of the spinal cord.

Andrew Vesalius now, however, loomed upon the field of anatomical science. Born in Brussels, in 1514, and, as we have seen, early educated by Dubois, at the age of 23, he became professor of anatomy at the University of Padua, and subsequently taught at Bologna and Pisa. He was the first to insist upon subordinating the authority of Galen to anatomical investigation. At the age of 28 he had completed his comprehensive and systematic view of human anatomy. The minds of men were ripe for the advancement of which Vesalius gave the signal. Breaking away from the traditions of the past, he originated new avenues of thought, and soon found himself followed by many clamorous disciples. Contemporaneous with him, but less fortunate in reputation, was Eustachius. He is the first who studied accurately the teeth, and the phenomena of the first and second dentition. He made extensive and minute researches into the organs of the body, especially those of the ear and brain. The work, however, which demonstrates the great merit of Eustachius, is his anatomical engravings; and it is remarked by Lauth that, if the author himself had published them, anatomy would have attained the perfection of the 18th century, two centuries earlier at least. Their seclusion for that period, in the Papal library, has given celebrity to many names, that otherwise would have marked the mere verifiers of the discoveries of Eustachius.

Two of the pupils of Vesalius, Columbus and Fallopius, became distinguished anatomists. The former by improving the anatomy of the bones: by giving a correct account of the pulmonary artery and aorta, and their valves, and tracing the course of the blood from the right to the left side of the heart. The latter by a more correct account of the internal ear, and the discovery of the utero-peritoneal canal, which still bears his name. Thus the names of Vesalius, Eustachius and Fallopius became as prominent in the history of modern anatomy as those of Herophilus and Erasistratus are in the history of ancient anatomy. But this science now rapidly extended its hemisphere. From the galaxy of brilliant men, that now appeared, the names of Avanyi, Varolius and Aquapendenti are specially illustrious. The latter by his precise and diligent dissections, discovered the membranous folds in the interior of the veins, which he named valves. Subsequently, in 1574, Fabricius, the last of that illustrious line of teachers in the Universities of Italy extended this discovery,

and demonstrated the presence of the valves in all the veins of the extremities.

The discoveries which had now been made, and the errors which had been rectified, gave to anatomy the character of a useful, as well as an accurate science, and paved the way for a discovery which, though not anatomical, but physiological, is so intimately connected with correct knowledge of the shape and situation of the parts, that it exercised the most powerful influence in the future progress of anatomy. This was the discovery of the circular movement of the blood. Let all due homage be shown to William Harvey, to whose genius the discovery was revealed. Attempts have been made, and even in recent years, to dim the lustre of Harvey's claims to this great discovery.

The medical world was startled, in 1876, by the announcement that a monument of Cesalpino was unveiled in Rome, on the ground of his being the first discoverer of the circulation of the blood. His claims, however, are groundless. History is replete with facts that no name but Harvey's can lay claim to the glory of this discovery. Men there were besides Cesalpino, who had a shadowy idea of the truth, but they were groping in the dark, their minds could not throw off the old doctrine of flex and reflex of the blood; and this great truth was knocking at the intelligence of men, but no one opened the door but WILLIAM HARVEY.

Here is his own story, in which he depicted the obstacle he met with in his efforts to discover the truth. "Devoting myself to discover the use and utility of the movements of the heart in animals, in a great number of vivisections, I found, at first, the subject so full of difficulties, that I thought for a long time, with Fracaster, that the secret was known to God alone. I could distinguish neither, in what manner the systole and diastole took place, nor at what moment the dilatation and contraction occurred, owing to the celerity of the movement of the heart, which, in most animals, is executed in the twinkling of an eye, or like the flash of lightning. I floated, undecided, without knowing on what opinion to rest. Finally, from redoubled care and attention, by multiplying and varying my experiments, and by comparing the various results, I believed I had put my finger on the truth, and commenced unwinding the labyrinth. I believed I had seized the correct idea of the movements of the heart and arteries, as well as their true use. From that time I did not cease to commu-

nicate my views to my friends, or to the public in my anatomical lectures, after the manner of the academy of old."

These views were first announced by Harvey in 1619. His book titled "An Anatomical Disquisition on the Motion of the Heart and Blood in Animals," was published in 1628. It is dedicated to the unfortunate King Charles the First, who took a deep interest in Harvey's discovery, and went over, with him, the experiments upon the circulation of the blood. Aubrey writes: "I have heard Harvey say, that after his book on the circulation of the blood came out, he fell mightily in his practice. It was believed by the regular, that he was crack-brained; and all the physicians were against him. It is difficult for us to realize what it cost Harvey to emancipate himself from the opinions taught and held by men whom he was almost ready to worship; and it was years, and not until he had gained undeniable proof that he, almost with reluctance,—and certainly with great modesty, combated the opinions of men established as very learned." Harvey had the satisfaction, before his death, to see his theory of the movements of the heart and of the blood universally adopted.

Time has only allowed me to touch very briefly upon this subject. But in these remarks I hope that I have thrown open the portals to some of the great researches that have been made in anatomical science.

THOUGHTS AT RANDOM.

BY A PHYSICIAN.

THE readers of the JOURNAL will bear witness that a long time has elapsed since they have heard from me in this role. One or two of your dental contributors hinted—perhaps said that I was intruding by entering the field of dental science, as it is well known that in general, physicians are not well posted in the practical details of dental surgery. But regarding dental, as well as general surgery in the light of medical specialties, I have not been able to find the line of separation, but have felt that every part of the "human form divine" is within the range of the physician's legitimate consideration. Besides, in the early days of my practice, dentists were "few and far between," and I was

forced to give close attention to diseases of the teeth and mouth, a care of which I have been happily relieved in more recent times.

While claiming as above that surgery, both general and dental, are, in their very nature, specialties in medicine, it is not claimed that either the surgeon or the dentist is a physician. Sir Astley Cooper was not a physician, and I heard our own lamented Blackman call himself a specialist, because confining his practice to surgical diseases. And in passing, let me say that it is doubtful if the best possible education for the specialist lies in the regular course of medical study. It may be that at present no special colleges exist which will better prepare the specialist for practice than the medical schools, with special teachers attached, for the practical parts of the specialty; but such schools are possible. The dentist or oculist must have a course in anatomy, physiology, pathology, and chemistry as extensive and as accurate as that accorded to the physician. But if anatomy is taught as it should be to medical students, the dental students, if in the same class, do not receive the best possible anatomical teaching for them. If faithful to the medical students, the teacher will be very minute in the hernial region, even if, for want of time, he must hurry over the facial region. And the same principle applies to the other studies named.

A glance at the notices of the late meeting of dentists at Minneapolis, impresses the reader encouragingly. An idea is prevalent among the masses—now, don't print these words, *them asses*, for that would be bad grammar—but many think such meetings are held for the purpose of raising the prices, and possibly to tell each other how to *pull* teeth.

The somewhat hackneyed question of "chemical food," in one of its many forms, came up for consideration. But after all, is there any food that is not *chemical*? and are not the digestion and assimilation of all foods simply chemical processes, strictly obedient to the laws of affinity, as modified by vitality and other circumstances, ordinarily or accidentally present? If correctly reported in notices that I have observed, the statement was made and reiterated, almost *ad nauseam*, that inorganic matter can not be assimilated by the animal till it has been organized by being taken into the structure of the vegetable matter. It was the frank Irishman that said, "If ye don't believe my testimony I'll

swear it over again ;” and it may be that frequency of statement becomes at least a partial substitute for proof. At any rate we find no proof in the reports, so far, but presume it is still forthcoming. In the meantime we old physicians will continue to administer iron to the pale girls, even though the metal should be pure — uncombined, as precipitated by hydrogen. And we shall likely have our usual reward in seeing the pale cheeks redden and glow with health, till their possessors become as pretty as sun-painted peaches. Is iron inorganic? And while it is enriching the blood, enabling it to carry increased quantities of passive oxygen, and thus developing vital force, as it is a foreign force, is it a foreign substance? an intruder? or is it a part and parcel of the living being whose blood it enriches? Common sense would say that this iron is as truly assimilated as is the albumen of the soft-boiled egg, or the fibrine of the roast beef. And in proof, let it be borne in mind that the iron is just as essential to the life of the blood as its albumen or fibrine.

I am aware and do not forget that iron may be and is taken with the food. And it may be true that the food used, even by the pale girls above referred to, has iron enough for the constitutions of the eaters, yet they may not be able to use or assimilate it. The question comes up then, why dose them with iron, while the food has as much or more of it than they need? The answer has several phases or aspects. Quantity of matter is one of the modifying circumstances of affinity, as taught in most, if not in all text books. Let me give a homely illustration: A farmer is feeding a mare and her colt with hay, a mixture of clover and timothy. The fastidious colt is fond of the clover only; and in the mass put into the manger there is as much clover as the colt can eat, but it is not easily taken. In picking out the clover from among the timothy, the colt pines and fails to grow. The farmer notices this and gives the colt a goodly supply of pure clover hay, and it prospers.

Now, the food of our patrons may have enough of iron, lime, etc., yet these substances, whether in vegetable or animal food, are there in obedience to affinities existing in the organism. That they may be assimilated by the eaters, these affinities must be overcome, which may require more effort on the part of the vital powers than would be necessary to assimilate the same substances if chemically free. And to go back to the colt, the reader

must see that the greater the relative proportion of clover in the hay, the better the colt would thrive, while it was still better off in the possession of the unmixed clover.

No two constitutions are alike in their assimilating powers. I know a man who cannot digest fat beef, raw, roasted or broiled, yet he is well nourished by digesting and assimilating other foods. So two persons may diet alike and one may get from the food all the iron, lime, etc., that his system needs, while the other is pale with impoverished blood, and his bony textures lack in hardness. He may manage other constituents of the food as well as his competitor; and because he is defective on these, shall we let him starve to death, or shall we make it easier for him to get them? Bear in mind that both digestion and assimilation are definite chemical processes, affinity being sometimes modified, but never contradicted. And bear in mind, too, that chemical agents may have very strong affinities for substances which they are not able to take when but a very simple chemical combination intervenes. As an illustration, many acids have strong affinities for lime. All know this is true of acetic, nitric and hydrochloric acid. Of course lime has equal affinities for them. But let the lime be already united with phosphoric acid, to form a sub-phosphate (bone phosphate), and not one of these acids can then take it from the phosphoric. In like manner, the food may contain all of a certain substance needed by the system to be nourished, yet on account of previous combination, the vital powers may not be able to take it. In such cases the nutritive functions cry out for help, and the cry should be heeded.

But in the warfare against the inorganic food theory at the late meeting at Minneapolis, as is true of previous meetings of the profession, a part of the battle was waged on doubtful territory. The readers of the dental periodicals may remember that some years ago a dentist in California asked Doctor Watt if lime, as such, could be appropriated by the animal system. If memory is not at fault, Dr. W. referred to a fact that his hens, confined to a poultry yard, yet receiving an abundance of albuminous and starchy foods, dropped eggs with very thin defective shells, while a few had no shells; and that on mixing Italian marble dust with their food, otherwise unchanged, in a brief period the shells were found to be thick, firm and solid. The inquirer replied that this had no bearing on the question, for

marble is composed of pre-historic shells, and was, therefore, organic. Like the girl's pet monkey, this seems to be far-fetched, but if marble is organic perhaps iron is too. In the shape of horse shoes it becomes practically identified with the proudest of quadrupeds, and is also found in the blood of the animal creation.

But the hottest of the battle seems to have been directed against the lime phosphates. The use of bone phosphate, and lacto-phosphate of lime, by prospective and nursing mothers, to improve the texture of their childrens' teeth, was specially condemned, on the basis of their inorganic nature. But are not these phosphates obtained directly from bones? And have they not a reasonable claim to be classed among organic substances?

But after all, is not lime lime? and phosphate of lime calcium phosphate? The carbonate of lime obtained from bones by calcination, etc., will play the same chemical parts that carbonate of lime from the quarries plays. The acid that decomposes it, taking the lime from the carbonic acid, finds no difference in the reactions set up.

Iron exists in the blood usually as a sesquioxide, and as a carbonate of the protoxide. And when these, from the blood, are reduced to the metallic state, they make as good horseshoe nails as the iron obtained by reducing these same compounds as found in the mines.

The presence of chloride of sodium in the blood, and other fluids and textures of the bodies of animals seemed to stand in the way of some who held to the non-assimilation of inorganic matter. Some, if correctly reported, claimed that it is simply a foreign substance. Like the bound boy at the corn husking, it is not part of the company. The bound boy used to carry fresh water and the bottle of whiskey to the huskers, and was therefore allowed to eat at the third table, or behind the door. So some seem to have admitted that this salt aids in the solution of some of the nutritive materials, while others thought it aided in the transmission of other matters, like the bound boy helping the pigs and geese to get through the cracks in the fence, only his work was not dignified by the big names *endosmosis* and *exosmosis*. It goes in chloride of sodium and comes out chloride of sodium, seems to have been a favorite statement with several participants in the transactions.

But, as taught by the best of all physicians, I believe that "Salt is good."

I knew a little boy who suffered greatly from defective respiration. He had views about the office of air in breathing, a little like the above notions about salt. He all the time wanted more breath. And he said, What's the use of drawing in the air and blowing it right out again? If I can hold it in awhile may be I can get some good out of it. So he would inhale and hold till his eyes were almost bursting, then he would blow out and refill his lungs, and repeat the process of holding. He got no relief. A trouble was he did not know that he blew out something besides that which he had just taken in. The boy was as wise as some of the speakers at Minneapolis, if correctly reported.

Soda in some shape seems to be essential to the health of the system, and most writers, I think, hold that the soda of the biliary secretion is obtained from the chloride of sodium taken with the food. It would make this paper too long to discuss all the uses of this salt in the animal economy. But if we get the soda into the system in any form that it can tolerate, it can change it to whatever combinations of it may be needed by the different organs and functions. And this is analogous to the action of the system on iron. It has been said that the sesquioxide and the carbonate of the protoxide are the compounds of iron wanted in the body. But give it metallic iron and it can change it readily into the desired combinations, as the necessary chemical reagents are always on hand, and ready for duty.

Perhaps a study of the beautiful action of iron in blood may impress some with the idea that our constitutions have assimilative powers beyond their present estimates. Notice the iron as the blood starts into the aorta. It is here a sesquioxide. That is, one equivalent of iron is held by an equivalent and a half of oxygen. As the blood passes along its course the half equivalent of oxygen is gradually given off as needed, thus, by correlation, furnishing the force necessary to carry on organic life. But as fast as the iron is reduced to a protoxide by this giving off, carbonic acid unites with it. With the sesquioxide there is arterial blood, with the carbonate, venous. The dark blood, with its carbonate, is carried to the lungs, where it meets with fresh oxygen. But carbonate of iron cannot remain in the presence of free oxygen, because the iron becomes, almost at once, a sesquioxide; and as carbonic acid cannot combine with this, it is set free and escapes with the breath.

And it is probable that no other fact in medicine is better

recognized than that the administration of iron increases the red corpuscles. And this whether it is given as a minutely divided metal, as a chloride, citrate, or sesquioxide.

Of course all admit that the ordinary process of development calls for the vegetable kingdom between the inorganic and animal, but there is such a thing as insisting on boundaries more definite than Nature has marked out. The different kingdoms, and sub-kingdoms overlap or interlace, and it is possible that the various nutritive functions may follow suit.

There was a time when dentists were not expected to discuss such questions. But it is very gratifying to witness the healthy progress.

EFFECTS OF ZYMOTIC DISEASES UPON THE TEETH.

BY DR. F. S. WHITSLAR, YOUNGSTOWN, OHIO.

[Read before the Northern Ohio Dental Society.]

IN the consideration of this subject we are brought to the investigation of not only the causes of decay of the teeth, but of the arrest of the developmental process. Causes of decay are two-fold, and may be classed as predisposing and exciting. You will bear in mind that these two divisions are clear and distinct. There are many things which predispose teeth to decay, but we know more of the exciting than of the predisposing causes. When the structure is imperfect they are more likely to decay than when they are perfect. Then again the teeth may be comparatively well organized, but owing to defective nutrition and enfeeblement of the vital forces, they are more susceptible to decay. With regard to exciting causes there has been much discussion. Grouping the various opinions entertained by those who have experimented and written extensively upon the subject, we have those who regard it as a *real* disease, a vital phenomenon, strictly comparable to morbid conditions of other more highly organized parts of the body. Then those who regard it, in the main, as the effect of mere chemical action, but also consider that some very constant appearances are only explicable on the hypothesis of vital action. Then again it is regarded as wholly and entirely the effect of chemical action, in no degree modified by connection with a living organism.

Fox, Bell, Hunter, Cuvier, Hertz, and Newman maintained that dental caries is an inflammatory affection, a *true* disease of the dentine; and the name of *odontitis* was given to this supposed disease. This theory has so much evidence against it, and so little in its favor, that it need not detain us any longer.

Furthermore, as preliminary, I wish to call attention to the constituents—elements of the teeth, and the bonds which hold them together. Of the sixteen elements composing the human body, about twelve are found in the structure of the teeth, and may be classed into organic and inorganic matter. The bonds which hold together or maintain the structural integrity of the teeth are, first the vital, second the chemical, and third the mechanical, the latter depending upon the first two. Remove the vital principle from a tooth, and the chemical force soon begins to be impaired and disintegration from the first is comparatively an easy process. The vital force when present, holds the peculiar chemical affinities that exist here in its grasp, and the latter are at their best only when thus governed.

Having indulged in these general statements, we approach the subject. What are zymotic diseases? Dunglison informs us that a zymotic disease is any epidemic, endemic, contagious, or sporadic affection, which is produced by some morbid principle acting on the organism similar to a ferment, as the major *exanthemata*. In the classification of Dr. Wm. Farr, zymotic diseases comprise those which are epidemic, communicable, inoculable, capable of propagating from existing *foci*, or, by the want, or bad quality of food. This class includes four orders: miasmatic, enthesic, dietetic, and parasitic.

The first thing to which we ask your attention, as a probable effect of zymotic diseases upon the teeth, is the partial arrest of their development. The crowns of teeth, bearing the marks of interrupted development, instead of presenting the smooth and glossy surface characteristic of finely developed enamel, are disfigured by the presence of irregularly grooved and pitted surfaces, usually accompanied by a considerable diminution of size. The incisors are commonly very thin and compressed, while the cuspids and the cusps of the molars are terminated by sharp points. The enamel and dentine tissues are not only deficient in quantity, but are defective in quality. The enamel will be porous, yellow, opaque, and fragile, while in the dentine that uniformity of size

and arrangement of the dentinal tubes, which they exhibit in well developed teeth, are wanting. The defect of structure will be found limited to such portions of the several teeth as were undergoing development at the same time, and were consequently under the same constitutional state. We sometimes find teeth which are marked by grooves and ridges regularly disposed. The grooves are the result of imperfect, and the ridges of perfect development of the enamel and subjacent dentine. These transverse markings resulting from alterations in the developmental process, find almost an exact parallel in the striæ produced by similar causes on the nails. This parallel points to the theory that the teeth are appendages of the skin, and belong to the dermal or tegumentary tissues. You are doubtless familiar with the statement of Tomes that, "The mucous membrane which lines the alimentary canal, is continuous with—is indeed a part of the external skin, with which it blends at the lips, and that all teeth are alike developed from a part of the mucous membrane, and any connection which they may ultimately get with the bone is a secondary matter."

Salter says, "Teeth certainly are not extraneous organs, as suggested by Hunter, but have a distinct vitality. They undergo nutritional changes by virtue of a plasmic circulation in their tubular structure; and two of their hard tissues manifest sensibility, which in disease may be exalted to extreme painfulness. The teeth are not parts of the true skeleton, but may be considered as elements of the dermal skeleton. They are developed from the tegument of the mouth, and though closely embraced by the alveolar processes of the maxillary bones, are never in man united to them."

Now while we cannot in every case trace this ridged, pitted, honey-combed condition of the teeth to the presence of serious illness of the patient during the time when the defective portions of the teeth were being developed, it can scarcely be doubted that an imperfect organization of the teeth, if not the result of some special disease, such as measles, influencing the system generally, is yet consequent upon constitutional conditions.

The simple fact that if one tooth is affected, those parts of other teeth which correspond in respect to the period of formation will present a similar condition, precludes the supposition that the effect is merely due to a local cause. Hereditary syphil-

lis in its effects, may often be traced as the cause of a peculiar dwarfed condition of certain teeth. The incisors and cuspids are of small size, and peg-shaped; the crowns are notched, the notch being in the main, a concavity from the one corner to the other, though there may be secondary notches in this general concavity. This class of teeth which we note as syphilitic, have a dusky, opaque appearance, and are relatively small. They are of a very soft character, and consequently wear down very rapidly. Moreover it is claimed by the best authorities that constitutional syphilis is capable of modifying the nutrition of many parts of the body, manifesting its influence in attacks on the hair, the nails, and the skin generally. Now the homological relation which exists between the teeth and various dermal appendages, may serve, if not to explain, at least to render less surprising, the fact that the developing teeth should be a chosen site for its manifestation.

So much for the arrest of development. Now what are the effects of zymotic diseases upon teeth which have none of the marks of partial development? We answer that all febrile conditions or diseases predispose teeth to decay. First, by diminishing vitality. Second, by changing the secretions of the mouth so that they act injuriously upon the teeth. In dyspepsia we have not only the predisposing, but also the exciting causes of decay, as it not only impairs vitality, but prepares, in the stomach, an acid that is continually being thrown upon the teeth, which acts upon them with great energy. I need hardly say that residence for any length of time in miasmatic regions, inducing unfavorable conditions, institutes a predisposing cause. And in brief, all epidemic, endemic, dietic, and enthetic diseases, derange the functions of the body, vitiate the secretions, impair the vitality, and may be classed as predisposing causes of decay.

WOMAN AND HER TEETH.

BY T. DWIGHT INGERSOLL, ERIE, PA.

WERE it not for the fact that sex is characteristic of almost every species of animal life, we might infer that the anatomical and physiological differences between man and woman would

have separated them into two distinct species; indeed, according to rules of classification, other species might have intervened and remained distinct to this day. Organizations so diverse in form and function may be attributable to the kind of living matter which each commenced existence. If both had started with precisely the same kind of protoplasm they would have come to adult life having the same sex, or perhaps without sex, if a highly organized asexual being were possible. The structure of all the organs of sense in both sexes are supposed to be alike, but the natural stimulants—light, sound, food, odors—acting equally on both, do not affect the female as they do the male. A woman may have a cranium of the same form and the same weight of brain as a man, but cerebration will not be the same; both cannot have the same thoughts; sexual structure makes it impossible for both to have the same emotional exercises. It is believed by Dr. E. H. Clark that “organs whose normal growth and evolution lead up to the brain are not the same in men and women. Consequently their brains, though alike in microscopic structure, have infused into them different, though equally excellent qualities. If it were not so, Emerson’s lines would be absurd; sex would be a myth; men and women would be identical; and it would be folly to discuss the relation of sex.”

In aboriginal life, habits and thoughts are more alike, but after the category of like parts and similarities is complete, there is still a deep gulf between them which never can be bridged. The female sex asserts itself sometimes in emotional states and feelings never experienced by the opposite sex. Children require a degree of tenderness and sympathy possessed by the mother which the father, from the very nature of his organization, is utterly incompetent to give. The difference in mental states is compensated by a kind of magnetic attraction, by which a constant interdependence of the sexes is established. The woman being conscious of her weakness, turns naturally to her lord for help and protection, while he, knowing his superior strength, delights in supplying her wants, and in making her happy. Gratification of this character fosters a feeling of dependence to the neglect of a proper amount of outdoor physical exercise, and tends to enervation, general debility and a premature loss of teeth. A mother’s teeth are sympathetically connected with the reproductive organs, giving her sometimes severe pain during the

period of labor. The *Mississippi Valley Monthly* contains the statement of a lady thirty-two years of age, as follows:

"I am the mother of five living children, one dead. My terms of gestation are unmarked by any thing unusual. My labors last about eight hours on an average. My last came on as usual with me—pain beginning in the back, passing down to the lower part of my bowels. When I had been in labor about an hour, the pain suddenly ceased in my back and womb, but set up in a tooth that had been aching several times during the past nine months. The pain was paroxysmal, coming and going just as it did in the womb. The pain was in the tooth when my physician came, and he wanted to extract it, but it being but one of a few remaining molars, I said to him that the cavity in it was small and that I wanted to have it filled,—couldn't he put something in it and stop the aching? He put cotton saturated with chloroform into the cavity. The pain left the tooth to appear in the back and womb; but the effect soon passed off; the pain in a few minutes returned to the tooth, to be again and again relieved by the chloroform. The doctor said no progress was being made in the labor, and that in his opinion none would be until that tooth was removed. * * * Twelve hours had now passed; none of my former labors had gone over eight,—generally six hours terminated them. I had become, I thought, exhausted, and asked the doctor to extract my tooth, which he did, and my baby was born in an hour."

Last April Dr. W. H. Atkinson related an almost identical case, before the First District Dental Society of New York State. The painful tooth, however, according to Dr. Atkinson's statement, "was not much decayed." The expression is too indefinite to be valuable. It may be supposed, however, that the pulp was more or less exposed as treatment gave relief. In this case labor had usually occupied about six hours, but now it had lasted thirteen hours. After the painful tooth had been extracted, "the baby was born within an hour."

The pregnant condition may not be the only one involving sympathetically the fifth pair of nerves, as it is supposed the teeth are more or less affected in menstruation, and sometimes in the change to puberty. It is believed that "not only pregnancy diminishes the density of the teeth," but according to Dr. V. Gallippe, "this aptitude for dental caries frequently coincides

with puberty and is accentuated by each succeeding pregnancy." He and Landouzy attribute this to the lowered degree of alkalinity of the fluids of the body. To satisfy himself that these conditions had a direct bearing on the teeth, Dr. Gallippe made a large series of observations in hospitals, showing that in a majority of cases the saliva was acid. "The elimination of carbonic acid," he says, "is greater in man than in woman; it is nearly double at the period of puberty."

Mothers in the pregnant condition had learned to expect pain in the teeth before it was known to dentists. They now send their daughters to a dental office before marriage, that they may escape as much pain in the teeth as is possible on becoming mothers.

It seems that premature loss of teeth is attributable to evils resulting from civilization; and an inquiry arises in regard to some possibility of retrieving the loss. It may be said that "a return to the primeval state of the race would ensure for it a perfect denture;" but even if it were conceded to be effectual, the plan is wholly impracticable. If degeneracy is largely attributable to civilization, each case must be regarded as an inheritance which has been accumulating for many hundreds of years. The retroactive manner of life, necessary to regain the loss, would require other hundreds of years for its accomplishment, and might produce unfavorable changes in the organism so great as to cause the extinction of the race (unless brought about slowly) before restoration of the teeth to primitive development could be effected. Instead of falling back to the pre-Adamic state of existence, contrary to inclination and sound reason, let us hold on to the progress already made, and gather up what little intelligence we have to check the progress of abuses incident to a glorious civilization. Some means should be devised to restrain those habits that tend to degrade the mind, and enervate the body. Public sentiment should be awakened and stimulated to exertion in suppressing licentiousness, where legal measures and church influence are inoperative. Obscene literature should be crowded out by that which is elevating and ennobling; and the church should enfold its younger members in bonds of purity in thought and action. If suitable measures could be instituted for the prevention of marriage by those who are diseased, it would be a grand step toward human improvement, on the principle of

the "survival of the fittest." Before the present free-marriage system can be broken up, in favor of a prohibitory one in cases of disease and near-blood relation, general intelligence and scientific principles must be brought to bear on the public mind, until it would feel the importance of favoring any movement or law that would lift humanity to a healthier and nobler plane of life and thought. With a general improved physique and health, there would come a more perfect development of the teeth, and consequently there would be less suffering and decay, as such teeth have a greater power of resistance to whatever tends to their destruction.

ARE WE RETROGADING? IF SO, WHY?

BY A DENTIST.

[A PAPER has been in the hand of the editor for some time that gives some attention to the questions found above. The thoughts are from an esteemed member of our profession, but as they had not received his finishing touches, we propose to use them in this way, putting some of our own thoughts among them, as occasion seems to require. He says:]

Sometime ago, while thinking of the present standing of the dental profession as a body of educated men, a question arose as to where the blame is to be placed for its retrograde movement.

(Many will not admit of this assumption.—ED.)

The literature of our periodicals is about on a par with that of the journals in the other professions, and in nearly every journal we find entreaties for more thorough knowledge, the chief topics being dental education, dental ethics, high professional attainments, etc., till we would suppose that the faithful readers have already memorized all the available modes of gaining and perfecting their stores of knowledge.

Those truly interested in the real progress of the profession are probably aware of a principle that seems to be undermining the whole fabric, an enemy that unless speedily arrested in its course will tumble to the earth and scatter our professional temple. I refer to the course of procedure of the State Board of Examiners. I would endeavor to speak modestly of this, for, ordinarily, if we attack the dogmas of others, we may expect to receive, in return, their disapprobation. So now I find I have

entered on a subject which from its nature forces me to condemn the action of those who have long been our instructors, who occupy high positions, and for whom I have the deepest respect. I notice the matter in order that, with due modesty, we may recognize our weakness, and apply ourselves more closely than hitherto to the task of clearing our path of progress of uncalled for obstructions.

What has this Board done to aid in the progress of our profession? When first established there was good reasons for its existence, as then there were many noble and true men in the profession, who for years had been battling for the advancement of professional science and art, who without such arrangement would have been left without any recognized professional standing. But the continued examinations of young men who have scarcely left the laboratory of so-called preceptors, have done great injury and injustice to the men who have spent their time and money in dental colleges, in order to reach legitimate and proper standing as professional men. This course has filled our cities and towns with a class of dentists, but few of whom have done anything to advance the profession to its desired and proper position. Look about and see for yourselves, and compare the graduates of reputable colleges with those authorized by the Board of Examiners, as they are now engaged in competitive practice. To which class are we to look for the ruinous reduction in prices? And which class distributes the handbills, circulars, etc., which are found in every dooryard of town and country, calling attention to the beauty and cheapness of their work? And which class will stop ladies and gentlemen in public places to show them the fine work they can do, displaying pieces accidentally(?) in their pockets, and reminding their victims that they need just such work? Specimen circulars might be given that would make the true professional man blush scarlet. Some, neither graduates nor licensees, call themselves "professors," while practicing in total violation of law.

(We think the writer rather overdoes the matter in blaming all this on the existence or action of an examining board. It would be better for all to graduate from good dental schools, but the Ohio law did not require this in order to practice. As the laws stood, we presume the Board was obliged to examine applicants when young, as well as if older. And from our limited

opportunities, we incline to think our Board has been careful in the examinations. We think as a rule the examinations became more rigid and exacting as time progressed, and this was right. We believe some of the colleges were less rigid and thorough than the Board. We greatly prefer the regular course, but there are exceptions in all professions. The ablest and most eloquent minister of the gospel we ever met, never was inside a theological seminary till appointed a teacher in one. And the best physician we know, never graduated. But such exceptions do not set aside the rule.

Our present condition in Ohio calls for more efficient legislation. Whether or not we can get what we want of course depends on the character of our future legislatures.

But while it is according to law, and regarded as legitimate to practice with the certificate of the Board, instead of a diploma, we doubt the propriety of anything tending to array class against class. If the licensee conducts himself as he should, we regard him as our professional brother, and can all the more do so when we remember that some of our most notorious quacks hold diplomas with our name gracing the lower right-hand corner.—ED.)

And now what can be done? Can the man, perfect in his literary attainments, with very superior professional acquirements, compete with the man who has cheek enough to publicly announce himself as professor, when really his professional standing, as already stated, is blank?

Now what shall we do? Tell the world that money spent in attendance at college is wasted? Or stop the plan of licensing by examining boards? The law should allow none to practice except graduates from reputable colleges, and it should protect them. If this is done the question of professional education will be shelved forever, for the price of knowledge will be sufficient guaranty for the honorable standing of its possessor; then will our little profession loom up to the standing we all so much desire. Thus protected, the scope of study before us, though almost universal in its range, can be entered into with zeal and energy, even though but a small portion can be attained in so short a period of life.

Let us each, then, endeavor to advance our profession, by a more worthy class of literature, so that our minds may be improved by study; for unless we strive for progress, the decline of

our profession will equal the velocity of its rise. Or if it may continue a feeble existence, it will show forth a foppishness of knowledge more contemptible than the grossest ignorance.

We should attend to our duties with ardor, even though our progress may seem slow. Step by step we have advanced safely; and as a profession we never have made a leap forward without endangering our security, or being obliged to retrace by long and laborious investigations.

Correspondence.

"I charge you that this epistle be read."

INFORMATION WANTED.

A FEW days ago a Mr. Martin came to my office to have a tooth filled. An examination revealed a large decay in lower right second molar. After removing the dentine and smoothing margin of enamel, I dried the cavity with bibulous paper and hot air, then burnished a piece of gutta-percha over the bottom of cavity, and with a common amalgam plugger commenced to fill the remaining portion of cavity with amalgam. But upon applying the plugger to the first piece of amalgam, the patient felt a slight pain and this pain continued as I continued the filling until it became unbearable. At each application of the plugger the patient would experience severe pain. I was compelled to finish the work with wood plugger. If the pain was caused by electricity, why did the patient instead of the operator receive the shock? Are there any amalgam pluggers made with insulated handles?

A. J. STEVENS.

MOUND CITY, KANSAS.

MOUTH WASH.—*The Medical World* suggests this formula, for use after meals, to arrest fermentation and development of micro-organisms in the mouth.

Chloral,	-	-	-	-	grains 15
Essence of Aniseed,	-	-	-	-	minims 10
" Peppermint,	-	-	-	-	" 5
Distilled Water,	-	-	-	-	ounces 4

Compilations.

"Gather up the Fragments."

THE PROPER MANAGEMENT OF A DENTAL CONVENTION.

AFTER some observation and reflection, we have come to the conclusion that the success of a dental convention is determined largely by the character of the opening session. It is the first half-day that tells, and that gives tone to the subsequent sessions. Let anyone consider the following description of a dental meeting, and see whether he gathers from it symptoms of failure in all that might be supposed to follow. The members assemble at the appointed place an hour or more after the set time of meeting. After considerable delay, some one suggests to the Chairman that time is passing, and that it might not be out of place to call the meeting to order. The Chairman thereupon takes his seat with an air of diffidence, and raps for order, which he finally secures, but not without repeated rappings and appeals.

The secretary begins to read his notes, and is interrupted by three or four members who enter the hall laughing and talking rather noisily, and who appear quite taken aback at finding the meeting already under way. The reading being finished, the chairman holds a whispered conversation with the secretary, looks anxiously over the assembly, and seems to be at a loss to know exactly what is expected of him in his official capacity. There is much delay in hunting up the chairmen of committees, and more delay in getting their reports, and much lingering along in a helpless sort of way, until finally the order of general business is dispatched, and the first subject for discussion is announced. Then the chairman relapses into an apathetic condition, and a period of listless inactivity ensues, while the majority of members have an air of irresponsible spectators. Finally, Dr.—, who is always looked to for the opening speech, rises with visible reluctance, as if fearing that his voice had been too often heard, and after some groping to get his bearings, makes an inspiring presentation of the subject.

Another period of silence, broken by an incoming member's tiptoeing across the hall to shake hands with friends. The secretary whispers to the chairman, who perhaps leaves the chair to whisper to one of the members, and for the time being the discussion is held in suspense. Suddenly a member who has been whispering not quite inaudibly behind a newspaper ever since the chairman first rapped for order, rises, hesitates a moment, and after some difficulty in securing a hearing, announces his belief that he has nothing to present on the subject. Then he rambles on in an aimless way, constructing phrases, until he winds himself up in a tangle, and sits down, as if aware, that what he has been saying gives color to his opening statement. Likely as not he makes an effective speech later on, when he has had time to "tune up." He is followed by others who make short speeches, some to the point and others quite foreign to the subject, and so on and so on, until some one moves the next subject.

Is this picture too highly colored? Admitting that it is, the faults portrayed are not always conspicuously absent. They might be easily abolished altogether, if members would attend to a few simple suggestions. In the first place, it is incumbent upon every member to be promptly present at the time appointed for meeting. Hand-shakings and greetings are perhaps not out of place even after the session has opened, but they should not be allowed to disturb the meeting. It must operate somewhat to divert attention from a speaker to have a member cross the floor ever so carefully. It ought to be regarded as the height of indecorum for anyone to unfold a newspaper during discussions. Members should all the more use their own judgment and good sense in numerous small matters of etiquette like these, because they are not supposed to be under the surveillance of the chairman as regards personal manners, like boys under the eyes of a schoolmaster. It is not his office to give lessons in manners. It is his office, however, to have absolute control of the assembly, to direct its proceedings according to rules and precedents, and to preserve order. Some chairmen proceed to discharge these duties very timidly, as if afraid of exceeding their privileges. Such a chairman seems to forget that he is expected to use authority. He must not be possessed of the idea that humility requires of him to be somewhat lax and informal. That he occupied a position of exaltation should ever be present to his mind. The posi-

tion cannot be sustained without some attention to formality and dignity. Some chairmen do well for two or three sessions, and then by relaxing vigilance, and falling into careless, indolent ways, allow the tone of the meeting to decline almost to demoralization long before the time for final adjournment. It requires much tact to sustain interest and to prevent premature flagging; still, it can be done by setting an example of interest in all that is going on, and by promptly attending to stragglers.

A few more words to members. In many instances we see speakers turn their backs to the chairman and address the assembly directly. It may not be out of place to remind such that usage requires that words intended for the mass of hearers should be directed to the chairman. There is some liberty allowed in addressing an inquiry to an opponent, but, as a general thing, the chair must be addressed. To interrupt a speaker and share the floor with him a minute or two, is a gross violation of the rules and customs of deliberative assemblies.

Finally, let no member who has at heart an interest in seeing a convention successful, retire from the assembly-room during a session without good reason. Nothing tends more to chill interest in a discussion than to have a member rise in an indifferent air, reach for his hat, and saunter out, leaving the door to slam behind him. Then the man with the new appliance, who passes it around for inspection during the heat of discussion, ought to know better. Those of us who go to the circus occasionally (to take the children) know how outraged a man feels when a fellow comes between him and the clown, just at the funniest part, and warns him that his opportunity is rapidly slipping away for buying a glass of "sparkling fountain, crystal stream, as-cold-as-ice-can-make it" lemonade. Everything has its place, and the discussions ought to have a large place in our conventions, and nothing should be allowed to break in upon them.—ED. *The Cin. Med. & Dent. Jour.*

OUR CIVILIZATION.—It is certain (W. D. Howell's in *The Rise of Silas Lapham*) that our manners and customs go for more in life than our qualities. The price that we pay for civilization is the fine yet impassible differentiation of these. Perhaps we pay too much, but it will not be possible to persuade those who have the difference in their favor that this is so. They may be right.

THE CLASS OF MEN NEEDED IN THE DENTAL PROFESSION.

TO SAY that more men are needed in the profession would seem to be preposterous, and yet it is nevertheless true. But it is a certain class of men—men of brains, energy, integrity and health—not substitutes. Such men are now imperatively demanded to enter the walks of professional life. There is room at the top for men with vigor, earnestness, strength of will, and sincerity of purpose, good habits, temperance and general habits of economy and industry. For such there is a mighty work to perform, and they must be well qualified to perform it. They must be brainy, possess sound judgment and quickness of apprehension. Common sense is of more importance—is more highly valued—than *mere* scholastic attainments. A sound mind in a sound body; one possessing desirable powers of adaptation, qualifying its possessor to fulfill almost any station, adapting himself to existing exigencies, is always in demand—always at par or above. Such men are wanted to fill places of unusual responsibility, to which ordinary minds are not eligible, where the master spirit must control and direct conditions and circumstances—as a Grant marshals an army corps achieving victory—molding and controlling inferior minds as the potter shapes the plastic clay.

Health is a necessary requisite; a capability of sustaining not only burdens, but of imparting elasticity, energy and endurance to the mind; since physical health, vivacity and endurance are more intimately connected than is ordinarily supposed. This is based on correct habits. The man who indulges in wines and stronger drinks, or uses tobacco in excess, *necessarily* diverts his powers from their natural channels, abridging force, wasting energy, and tending to undermine even the firmest constitution. Sound health is inconsistent with such dissipation; habits at war with the vital economy, deranging the functions of its organism. Such health is secured only by obedience to physical laws.

They must be sympathetic and possess patience in a large measure. Perhaps there are few more frequently called on for sympathy and patience than dentists. It must be genuine, not assumed. True sympathy supposes a sensitive nature, a delicate

feeling and a discriminating judgment. To possess it the practitioner must be able and willing to put himself so intimately into the condition of the sufferer that he can detect the very shade of suffering, disarm reserve and anticipate relief. He who possesses true sympathy will be pretty apt to possess patience.

Integrity in the individual is imperative. The people are searching assiduously, as with a lantern at mid-day, for *honest* practitioners; and such, as soon as they earn a reputation for integrity, by a diligent attention to duty, by making themselves so useful that their patients cannot afford to dispense with their services, are always overflown with appointments—are compelled to refuse many who desire their valuable services.—ED. *Dental Eclectic*.

Editor's Specials.

"Write the Vision and make it plain."

HYDROCHLORATE OF COCAINE.

DEBARRED from active practice, it is not strange, perhaps, that we have neglected to give this agent a practical investigation, especially as the relaxed and painful state of the nerves inclined us to not only put off till to-morrow that which could be done to-day, but to postpone, indefinitely, all that the force of circumstances failed to drive us into at once. Lately, however, we have given a little attention to the matter, most of our experiments being made with a four per cent. solution.

We got started into the investigation in this way: In the summer a bicuspid tooth became very painful from inflammation in the socket. The cocaine was applied and the tooth extracted painlessly. True, it was not hard to extract, but would have caused a very severe operation without the medicine. Further, about a month ago we raised a crop of bastard boils, a cross between boils and abscesses. While passing through the abscess stage of *locomotor ataxia*, we were in the habit of taking nitrous oxide when a very deep abscess was to be cut into. These small affairs seemed not to justify such a course, and yet they were so exceedingly painful, and on a surface having a high degree of

hyperæsthesia, that we lacked the courage to cut into them, "Just as they are, without one plea," and so we put about four minims of the four per cent. solution into the hypodermic instrument, placed the point of the needle with the beveled opening lying on the boil, a little to one side of its apex. A gradual introduction of the point between the cuticle and *cutis vera* enabled us to force a minute portion of the solution on the surface of the latter. Waiting a brief period, we then elevated the body of the instrument, and pressed the point of the needle through the skin, at the apex of the tumor. The solution was then forced under the skin, and in a brief period, a cut through the skin was made without pain. This was so satisfactory that the entire crop was harvested in the same way. We used from three to five minims of the solution in each operation.

While the preponderance of testimony establishes the local anesthetic properties of this agent, so many have reported failures, that we have tried to find out the cause of such discrepancy. Mistakes in preparation, or the use of inert materials may in part explain. But we have seen no notice of careful experiments to determine the time required to produce the anesthetic state locally, by this drug. One man said he had waited eight minutes, and made partial failure, but suggested that if he had waited twelve, he would have probably succeeded. Others have waited four minutes, and various results are reported. We are inclined to think these delays are too long. At each successive operation, in opening the boils, we reduced the interval between the application and the cutting, and had quite as good, if not better success with the last than with the first.

Then we determined to find out something definite about this. Selecting a highly sensitive surface of sound skin, four minims of the solution were injected immediately under it, and the surface was tested by sudden pricks with the hypodermic needle, deep enough to allow a ready and rapid escape of drops of blood. And this was painless, while similar pricks at a distance were quite painful. At the first trial we waited two minutes, and repeated the experiment day after day (as we didn't want much of the solution in the blood at once, as it was not known what it might do), and we kept on until the delay was but thirty seconds.

Next we thought of our cocker spaniels. Injecting the solu-

tion on the under surface of their ears, we proceeded to interpret their "dog-latin" as faithfully as we could. One of them shrieks from the slightest hurt, except in a fight; and the other is so impatient that he bites, as an argument for release, for equally slight hurts. When introducing the needle, both gave expression to pain; but after twenty seconds with one, and nine seconds with the other, each was quite indifferent to thrusts of the instrument in the vicinity of the point of insertion, even though these thrusts penetrated entirely through the skin. We regard this as valuable testimony, and it seems to indicate that too much time has been spent in waiting for the anesthetic action of the medicine.

May it not be that in waiting five, and especially eight minutes, the local effect has been, in great part, lost by the absorption of the medicine into the general circulation? Absorption varies in rapidity with the nature of the tissues involved. But, as a general rule, it is more rapid than is usually supposed. Let each reader inject ten to twenty minims of clean water under the skin, where it is reasonably thin, with more than the average quantity of loose cellular tissue beneath it, and watch the process of absorption, and he will receive instruction. The same phenomena will be seen, if the injection is made at any point, but tissue as above described, gives better facilities for observation.

A very intelligent and rather aged physician, who has been a great sufferer from neuralgia in the region of the sacrum, and along the sciatic nerves, writes us that, in his desperation, he had injected ten minims of the four per cent. solution alternately over the origins of the sciatic nerves, making two injections a day, and that these controlled the pain, and that the relief was noticeable within five minutes after the introduction of the medicine. He had given this treatment but a few trials at the time he wrote to us, but its prompt action and the uniformity of results thus far, seemed to inspire him with the hope that he would derive some permanent benefit from it.

We hope that carefully conducted experiments will soon tell us more about this valuable medicine. Yea, verily; for we need light.

Since writing the above we repeated an experiment in a modified form. Fifteen minims of water and five minims of the four per cent. solution were mixed and drawn into the hypoder-

mic instrument, and inserted into the forearm, partly to find out if it would relieve a very severe neuralgia of the occipital nerve, and partly to investigate the local anesthetic effect. In forty seconds we began thrusting the hypodermic needle into the prominence caused by the injection, passing it quite into the cellular tissue. Eight thrusts of this kind were made within two minutes, and alternately the point of the needle was pressed against a finger nail, with force enough to have penetrated the skin. The operations were equally painless.

IS DENTINE NOURISHED AFTER ITS DEVELOPMENT?

“A TOOTH when once formed is incapable of repair, except its cementum,” is reported as a statement made at Minneapolis.

The cementum is directly nourished by the periosteum. It may be doubtful just what is meant by the expression “incapable of repair.” If it is to be understood that the system has no power to make new dentine in quantities necessary to refill carious cavities, or to build on a portion to replace a corner or fragment broken off, then we all agree. But if “repair” means to consolidate and render more healthy, and capable of resisting decay impoverished dentine, we maintain that the human constitution possesses such powers. At a meeting of the Mississippi Valley Association some years ago, Dr. Spalding reported a case, in which the teeth of a youngish woman had become much impoverished, and the dentine showed but little resistance to cutting instruments. If memory is faithful, she had been using alkaline carbonates freely for a considerable time. She was put upon acid treatment, the acids being mostly secured by the use of fruits. In a few weeks the dentine was found firm and healthy. We have found the same condition in the teeth of nursing women, and in the mouths of those suffering from prolonged illness. And we have found prompt and complete relief from judicious treatment.

The dentine is not a dead mass, and hence it is amenable to the changes incident to starvation and nutrition. The artery and vein found in the pulp teach that nourishment is given from within; and it is almost certain that a healthy cementum aids in inducing healthy dentine beneath it. If the dentine of the root

were a dead substance after death of the pulp, a line of demarkation between it and the cementum would be observable. And if the root were not kept alive through and by the cementum, after the loss of the crown, the entire root would be rejected and ejected as a foreign substance.

But all this may not mean "repair," because it is not patching up deformities, or replacing fragments removed by accident or disease.

Some years ago, at a meeting of the American Dental Convention, perhaps, Dr. Rodgers stated that in a case in which the dentine at the bottom of a carious cavity was very sensitive, he put a piece of gold plate over the sensitive part, and to prevent contact, he had bent the corners of the plate to right angles, so as to make a golden stool, resting on four feet in the bottom of the cavity. Over this he had put a gold filling; and afterward, on removing the filling it was found that new, or secondary dentine occupied the entire space beneath the stool. Dr. R. was a close observer, and if this statement is true, there is some power of repair in the system, even for dentine.

We state this from memory as to Dr. R., but we can find the documents.

ANCIENT ANÆSTHESIA IN CHINA.

OUR watchful friend Dr. A. Berry, has called our attention to an extract from the *Edinburgh Philosophical Journal*, as published in the *American Journal of Dental Science*, in April, 1852.

Within the last two years the attention of the profession has been called to the properties of Indian hemp (*Cannabis indica*) as a local anæsthetic. We hope it will receive still further and closer attention. Unfortunately the preparations of it now found in pharmacy vary so much in strength, that it is unsatisfactory to use it. Each time a new supply is obtained, it is necessary to feel the way to find the efficient, and at the same time admissible dose. This so discourages the practitioner that he usually abandons the medicine, and tries to gain the ends sought by other agents.

We are well convinced from our limited acquaintance with the drug, that if we had its active principle concentrated, to a degree corresponding with the hydrochlorate of cocaine, and of

a uniform strength, in a form or preparation that would not allow the rapid dissipation of the active principle, it would be found more reliable, as a local anæsthetic, than the cocaine. We earnestly hope that those competent and qualified will give this a fair, and a prompt investigation. There is "natural gas" there if we only bore after it.

But it seems that in China it was relied on as a general anæsthetic. In this direction it is not so much needed, as is a reliable local anæsthetic; but the Chinese hint is worthy of cultivation. However, let the local question be first worked out.

But we must give the substance of the brief article referred to. We will not quote it quite *verbatim*, but will omit some of the jaw-breaking names:—

In examining the Chinese books in the national library at Paris, proof has been found that the Chinese surgeons have been long acquainted with the use of anæsthetics during surgical operations. The extract given in proof is from a book published about the beginning of the sixteenth century, in fifty volumes, quarto, and entitled *Kow-kin-i-tang*, "General Account of Ancient and Modern Medicine." It refers to the practice of a celebrated physician who flourished between the years 220 and 230 of our era. It states that, when about to perform certain painful operations, he gave the patient a preparation of hemp (ha-chich), who at the end of a few moments became as insensible as if he had been drunk or deprived of life. After a certain number of days the patient was cured, without having experienced the slightest pain during the operation.

If such results were attained by the "Heathen Chinese," what may we not have, by a concentration of enlightened science in the same direction?

HOW DO MEDICINES ACT?

NO SUBJECT interests us more than the *modus operandi* of medicinal agents. Some one gets up and gravely tells us, in dignified tones, that they act "dynamically," which amounts only to a high-sounding confession of ignorance. When a man says that, we may rest content that he feels pretty nearly sure that medicines *act*.

Once in a public meeting the action of arsenic was raised as a question for consideration. It was not its local action, as in the destruction of dental pulps, that was under consideration, but its general action on the constitution when taken internally in small doses. Our opinion having been asked, we referred to the fact of its being taken up by the general circulation and carried throughout the tissues, as had been demonstrated by chemical research. We suggested, in this connection, that diseased primary formations have a lower degree of vitality than that possessed by the healthy, and that the end aimed at, in using the drug, was to get it into the circulation strong enough to kill these weaklings, while the healthier were able to resist its feeble action by virtue of their stronger vitality, and that when killed these morbid matters are carried out by the emunctories. As some of our good old standby comrades and former teachers looked on and listened as if approving, we felt rather encouraged. But a boy got up and kindly told the chairman, while the rest of us listened, that in making these remarks we had demonstrated the fact that we knew nothing at all about the subject in hand. And so we subsided, and have since held that medicines act *dynamically*, whatever that means; for we don't know, and can't find any one who does.

But our hurt heart is healed, for we have been told that food, poison and medicine "act by the latent energies of the organism." Now we are content. Our eyes are opened and strengthened by exercise on the invisible sights of dark light, amid the cheerful gloom of sun-lit nights at mid-day.

This last sentence is not original, but is taken from vol. xix of the works of Benjamin Beryl Blynx, and is a part of the famous story beginning with "Twas midnight, and the setting sun was rising in the west."

A CRAVING FOR LIME, AND HOW SATISFIED.

On page 425 of the current number of the JOURNAL, it is reported that Dr. Darby, of Pennsylvania, "cited a case of a child afflicted with rickets and could not walk. It craved lime so much that it would eat plastering off the wall. Lacto-phosphate of lime was given and the child stopped eating the plaster and

improved." * * * He "had seen good results from the administering lacto-phosphate in connection with cod liver oil."

In general, the above accords with our own observation and experience. Even the domestic animals often indicate a lack of a certain element in nutrition. For example, when a horse eats his trough, or the manger, or barnyard fences, he is after potash. And scores of times we have stopped the craving by artificial food, or *medicine*, if the term is preferred, and this too, when all the food used was rich in potash. And, we have not been able to find any practical difference when furnishing the potash from the two kingdoms alternately. That from the inorganic seemed to give relief as promptly as that from the organic kingdom. As an illustration, we have watered one horse from a well whose waters held sulphate of potash in solution, and the relief was very prompt. Another horse, in the same condition has been supplied with wood-ashes, with like good results.

In like manner, when a horse inclines to eat clay freely, he will be quickly satisfied if furnished small quantities of sulphate of alumina. We may gain valuable lessons in therapeutics by closely observing the lower orders of animals. Both the above experiments with horses have been so often repeated, with uniform results, that mistake is impossible.

Because the food of a pregnant, or nursing woman is rich in bone phosphate, it does not follow that she and her babe can not be benefitted by it in a concentrated form; and all the more is this true because this salt is a primary factor in the process of nutrition. We could report successful cases with this drug, *ad nauseam*, many of which like Mrs. McC., could be verified by Prof. J. Taft.

IGNORANCE PROFESSIONALIZED.

PHYSICIANS hesitate to recognize dentists as professional men, because so many of them are uneducated. Perhaps they forget that if the dental profession is held responsible for all the ignorant "tooth-carpenters," the medical must be held for the man of the "strengthening cordial," the "aged physician whose sands of life are nearly run out," and their comrades.

The *Independent Practitioner* gives a specimen of medical literature as follows:

“C——— Mo

July 25 1885 Mr. P——— Dr

Sir—See a Piec in the Pape about the Dental asosatin Pleas tell me if a practising physician Can Be Come a member of your order i am a Doctor and Druggist yours as Ever

Dr I N———Po box 66.”

Calling some years ago to see a brother, who was a chronic and hopeless invalid, we heard the following: “Ho, no sir! You’re mistaken. Nothing’s wrong with your nerves, you need only something to sweeten your blood. Your blood’s got sour, but I’m the doctor that can sweeten it.—Ah—yes,—as you insist on it, we agree about the nerves. One of them is out of fix. There’s three nerves, 1st, the blood, 2nd, the stomach, and the third is—is—is—1st, the blood, 2nd, the stomach, and 3rd, the—the—LIVER. Them’s the three, and only one is wrong. The blood’s sour, and I can sweeten it.”

And yet this fellow had heard of the patient, and had come fifty miles, or more, to get a fee out of him.

But we’ll not charge these fellows to the medical profession, if the physicians will not charge our profession with the cheap John (horses) and the traveling jack (asses).

But we hope the time is coming when popular enlightenment will shut out all such practitioners. Give us universal peace, and universal temperance, and we can hire a teacher for every family, and pay the parents for the time spent in receiving instruction. We can soon have the laity in advance of present professional attainments, while we will give dentists and physicians a relative advancement superior to their present standing. We can drain every unhealthy marsh, suppress the cess-pools, and soon have man’s age like the age of a tree. Don’t be discouraged. “There’s a good time coming.”

INCRUSTATIONS ON THE TEETH.

“INCRUSTATIONS on the teeth show that there is too much mineral matter within the system.”

The above is reported as a remark made at the late meeting of the American Dental Association, by our special friend, Professor W. H. Morgan. The question arises as to the presence of

carbonate and sub-phosphate of lime in the buccal fluids. Is their presence normal, or abnormal? If normal, yet held in solution, nothing is wrong. But they would be precipitated, even from a normal solution, if all free carbonic acid is taken from the fluids. If abnormal, their presence, in solution may be as clear proof of "too much mineral matter within the system." An abundance of free carbonic acid might prevent their precipitation as "incrustations on the teeth."

But we believe these salts are usually found in normal saliva; but when ammonia, from any source, is found in the buccal fluids, it combines with the free carbonic acid (the solvent), and these salts are precipitated as "incrustations on the teeth," in proportion to the quantity of the carbonic acid thus taken by combination.

We don't hold Prof. M. responsible for the remark, but as it is imputed to him, the teaching has gone forth all the same, whether he said it or not. The matter is worthy of a sober second, if not a *third* thought.

VEGETARIANS.

"THERE are many people who live entirely on a vegetable diet." It is reported that such a claim was made at the late meeting at Minneapolis. But are there very many people who do so? A large proportion of those who claim to be vegetarians indulge freely in milk, butter, cheese, eggs, animal gelatine, etc. Just now we are unable to remember any one using no animal food whatever. We have no quarrel with the vegetarians, nor with their half way imitators. Still we believe that the use of lean meats is about the cheapest and most ready and pleasant way to get a due supply of nitrogen, and perhaps we might include phosphorus.

Think carefully, and see if the absolute vegetarians are not scarcer than you have supposed.

DENTISTRY IN GERMANY.—A society of dentists has been organized in Berlin. Its main object is the suppression of quackery in all that relates to dentistry. Women dentists are gaining ground in Germany. They are practicing in many of the great cities—in Hamburg, Strasburg, Cologne, Weisbaden and Frankfort-on-the-Main. They are very popular with the children.

A WORD OF ADVICE TO COLLEGE STUDENTS.

[THE following is specially adapted to medical students, but like the almanacs of our boyhood, "Though calculated for the meridian of Personapolis, with slight variations, will answer for any part of the country." The dental student can make the application, and take the good advice to himself, as if made for him.—ED. JOURNAL.]

At this season of the year our city receives a material addition to its population, classified under genus, student—species, medical. We trust that all the gentlemen included in this category have come to the metropolis with a zeal for study, with habits of perseverance, and with a desire to do creditable work. This new body will contain many recent college graduates as well as those whose previous scholastic privileges have been more scanty. May we offer to both classes alike a word of advice, which we hope they will heed? To both alike it may not come amiss, for the evil against which we would warn them is rife in undergraduate as well as professional schools. Many acquire it early in their course of study, and despite their efforts to emancipate themselves, they remain in perpetual bondage. We would name this evil—lack of independence in study.

By a man of independent scholarship we understand one who relies on text-books and lecture notes for only an outline of what to study, who regards them as only a means to an end. He may not be a genius. He may be below the average. He does not accept facts, however, unless he understands their relation to other facts; in short, he assimilates what he studies. Hence his armamentarium, small though it may be, is yet brightly polished and ready for instant use. He may graduate at the foot of his class, but he has learned to think readily and accurately. Such thought leads to decisive action. He has within himself the elements of assured success.

Contrast with him the man who relies wholly on text-books and lecture notes, who does not develop a single independent sturdy idea.

He may stand high at the final examinations, but he lacks real mental vitality. He has not developed that "emergency"

element so prominent in action in the life of a physician. He has laid narrow foundations and has not a warranted self-confidence. Many men are now about to begin their course of medical study. Hundreds have come to New York for the first time. To all of them we would give this exhortation, "think for yourselves." Be no man's servile imitator. To do independent work requires courage. There are many difficulties to be overcome. Many apparent contradictions will require reconciliation. If these ends cannot be attained after reasonable exertion, let a clue be given by the instructor. It is his business to aid the student by the development of the latter's mental resources. Then when the student lays aside any work as finished, he is able to give a reason for the hope that is within him. "That's right, why?" is a frequent class-room expression of a professor of mathematics, in one of our leading universities. The phrase illustrates the spirit in which all true study should be conducted.

Most men make the mistake of attempting too much the first year. Anatomy, physiology, chemistry, and physics alone are a sufficient task for a majority, especially if laboratory work in these branches be followed in addition to the lectures. Of course the amount of work which can profitably be undertaken depends on a man's previous experience, but we would earnestly advise that all the spare time of the first year be devoted to anatomy. This subject is at examination time the student's bugbear, primarily because he did not at the outset recognize its relative importance and did not govern himself accordingly. It is a difficult subject to learn and an easy one to forget, because from its very nature the greater part of it is purely arbitrary and has to be learned by rote.

One word more in regard to clinical instruction. There is a fascination about attending clinics, but it is simply a waste of time until a man has by study fitted himself to appreciate them. Otherwise, having eyes, he sees not; having ears, he hears not. Clinical instruction will come in due time, but is strong meat not adapted to the milk age.

A most praiseworthy aim is to shape one's course as to compete for a hospital position upon the attainment of a degree. The competitive examinations for these positions are free from any restrictions which cluster about college examinations. The best man wins, and he is rightly adjudged best who can answer prac-

tical as well as theoretical questions; who is, to use a common phrase, the best "all-around" man. This status of scholarship is not attained by servile study, but by fearless, independent thought. One need not despair of success. There are, we believe, more good hospital positions offered here every year than there are thoroughly first class men to fill them. Thus, with such a combination of theory and practice will a man go forth into the world conscious of his own mental integrity, confident in his own powers, and bound to do well. He has laid a firm corner-stone, the superstructure will be solid and permanent.—*The Med. Record.*

Societies.

"Wherewith one may edify another."

MINNESOTA STATE BOARD OF DENTAL EXAMINERS.

THE Board will meet in St. Paul, at the Ryan Hotel, Tuesday the first day of December, 1885, for the purpose of conducting the examination of candidates for admission to practice in the State, and to endorse diplomas.

J. H. MARTINDALE, *Sec'y.*

Books and Pamphlets.

TABULAR STATISTICS of 100 cases of urethral stricture treated by electrolysis, without relapse, by ROBERT NEWMAN, M.D. Reprint from *N. E. Med. Monthly.*

ADDRESS BY E. N. HARRIS, D.D.S., of Boston, delivered before the American Academy of Dental Science, Boston, is largely devoted to an account of the mind cure or metaphysical science, and is very interesting to dentists, many of whom recognize the influence of the mental condition of the patient during dental operations.

REPORT OF THE PROCEEDINGS OF THE TENNESSEE STATE BOARD OF HEALTH, 1880-4. Also,—Report of the Quarterly meeting at Nashville, July 7, 1885.

NATIONAL UNIVERSITY, (Washington, D. C.) Announcement Medical and Dental Departments, second year—Oct.—Apr.—1885-6. H. H. BARKER, M.D., Dean.

CINCINNATI MEDICAL AND DENTAL JOURNAL to be edited by A. B. THRASHER, A.M., M.D. and FRANK W. SAGE, D.D.S., is a 32 page monthly at \$1.00 a year, by M. A. Spencer & Co., Cincinnati.

Both the editors are experienced journalists and we wish them success.

UNIVERSITY OF MICHIGAN COLLEGE OF DENTAL SURGERY, Ann Arbor, eleventh year, Oct.—June, 1885-6. J. TAFT, M.D., D.D.S., Dean.

VOICE IN SINGERS, by C. H. VON KLEIN, A. M., M. D., Dayton, O. Price 25 cents.

Our Aftermath.

A NEW METHOD OF RECORDING THE MOTIONS OF THE SOFT PALATE.

BY HARRISON ALLEN, M.D.

In this paper, extracted from the seventh volume of the third series of the Transactions of the College of Physicians, of Philadelphia, Prof. Allen describes and illustrates an ingenious device, termed by him the Palate Myograph. When a straight rod is passed through the nose from before backward, in the living subject, as far as is possible, it will be found to impinge against the roof of the naso-pharynx. In this position the rod is not influenced by any motion of the soft palate; but if the end of the rod which remains without the nostril be raised, so that the rod be brought in contact with the anterior border of the nostril, the pharyngeal end of the rod will lie in a position which will cause a decided motion to be transmitted to it when the soft palate is raised.

Supporting this rod from the forehead, and recording its motions upon carbonized paper, the author succeeded in obtaining a series of curves representing the motions of the palate in deglutition, in respiration, in coughing, in hawking and snuffing, as well as various vowel and consonant curves, etc., etc. The illustrations are faithful reproductions, and deserve careful study from those interested. The variations of analogous curves obtained by experimenting upon different subjects, are also illustrated. Dr. Allen concludes his paper by suggesting medical and philological uses of his invention. *The Polyclinic.*

SPECIALISM.—When the worst has been said against specialism, it still remains as a system of work which, if narrow and comparatively humble in its aim, is practically more successful in attaining it than broader and more philosophical methods. The final test of every institution as of every individual in these days is the record of actual achievement which it has to show. Judged by the stand of results, whether in the shape of additions to the store of scientific truths or to the armory of weapons against disease, specialism has nothing to fear. Even its enemies must admit that it is to it that the vast strides which the art of healing has taken in late years are mainly due, and there can be no doubt that medicine can only continue to advance by a process of specialization becoming more and more minute. In the eyes of *idéologues* whose breadth of view rather impairs the keenness of their vision of things close at hand, the specialist no doubt may appear a somewhat unheroic figure beside his larger-minded brethren. Practical men, however, consider less the intrinsic nobility of the work than the efficiency with which it is done.—*Dr. Morell Mackenzie.*

THE DENTIST.—A French newspaper thus describes him :

To be successful, he must be handsome, or he must have strong personal magnetism, and be spotlessly clean, with soft, white hands, with a faint but pleasant perfume about them, and a breath absolutely without odor and which falls on your face like the suspicion of air wafted through a vine-covered window on a June morning.

Now, my dentist is lovely, and he wears the nobbiest white-flannel jackets that you can imagine. His work is good, which is a consideration, to be sure, and his charges are magnificent, which is another consideration of a different character, but then we must pay high for luxuries, and he is a luxury, as no doubt every dentist is to his own patients who admire him.

ALTERATIONS OF THE TEETH IN MORPHIA HABITUES.—According to M. Combe, (*Revue de Thér. Medico-Ch.*, 1885, No. 7), the abuse of morphia produces well marked changes in the teeth. The tubercles of the molar teeth are destroyed, and a deep excavation is formed in their place. In other cases, the caries begins near the edge of the gum. The incisors and bicuspsids are surrounded on their anterior and lateral aspects by a narrow groove, similar to that observed in dyspeptic patients with acid saliva. In the cuspid teeth, the alteration begins at the point, which soon presents a distinct depression.

FACIAL NEURALGIA—PARTHENINE.—Tovar has experimented with this alkaloid (obtained from *Parthenium hysterophones*, an herb growing in Jamaica). Giving a tenth of a grain every hour for four hours, and then decreasing the size and frequency of the dose, he cured rather a severe case in a week.—*N. Y. Med. Jour. from Gazz. Med. Ital., Lombard.*

OHIO
STATE JOURNAL
—OF—
DENTAL SCIENCE.

VOL. V.

DECEMBER 1, 1885.

No. 12.

Contributions.

"A word fitly spoken is like apples of gold."—SOLOMON.

DENTAL IRREGULARITIES—THE WIRE SPRING
PRINCIPLE.

BY GARRET NEWKIRK, M.D., CHICAGO.

[Read before the Central Illinois Dental Society at Bloomington, October, 1885.]

THE subject under consideration is deserving of more attention than it commonly receives either in dental schools or private practice. To consider it intelligently involves first, a thorough knowledge of the laws and effect of development, and especially the relations of the first and second sets of teeth. Here as elsewhere in all departments of medicine and surgery, anatomy and physiology are the only sure foundations of theory and practice.

It is not my purpose, however, in this paper, to discuss the general subject in an extended way, but simply to open it up in a manner for the verbal discussions to come. It seems to me that more profit will follow, if I confine my remarks to a sort of itemized consideration of certain details, and those immediately related to practical work. Especially would I mention and emphasize such as are in danger of being overlooked. In this line

of operative work as in others, there should be some sort of system; first, in determining the nature and antecedents of the given case; and secondly in carrying out the treatment. Heretofore there has been but little idea of system, except perhaps with a few who have said but little about it. There are a number of important questions—very important, which I shall only mention, hoping they will be discussed. One is that of the causes most commonly operative and another in close connection therewith relates to the anticipation and prevention of irregularities. About the first thing to set down as a systematic principle is this. Do not express any positive opinions as to what ought to be done or what results should follow till you first give a thorough consideration of the case, not only as it presents in the mouth but as illustrated by good, articulating models. Take time to study each case. Take plenty of time. Pick up the models in odd moments and look them over, keep doing this till you feel that you have pretty thoroughly mastered existing possibilities. Ofttimes when a person thinks he has well nigh determined the proper course of action to take in a given case, a new inspection of the models or the mouth will reveal some important fact previously overlooked. It may be one which will greatly simplify his methods of operating, or it may be something in form of an obstacle to success. But in either case the discovery is valuable as enabling him to act more intelligently. So, I repeat, take time to study a case thoroughly before doing anything, and before promising anything.

The first thing when operative procedure is contemplated is to take impressions of the upper and lower teeth and make articulating models. Then with a smooth pen write name, or initials, and the date on the upper cast, and corresponding initial on the lower. Then give the whole a good coat of shellac varnish inside and out. These models are to be kept exclusively for study and reference. On no account are they to be used for any other purpose. It is well to take a third impression—for fear of being tempted to use one of the original models. These models remain to represent the mouth in the original condition of the case. If any question arises as to what has or has not been done, the first witnesses are always in court. Also, there should be shelf-room provided for them so they may be had on call. The benefits of having them are numerous. By looking at them the patient gets

an intelligent idea of the condition of affairs in his mouth. They measure progress and settle differences of opinion. They are facts of record in the case.

Not only should we take time to determine what we will do, but we must lay out plenty of time for the work. Patients and their friends are often anxious to get promises as to what will be accomplished in a given time. Be very cautious as to promises. Tell them it is not prudent to hurry. As a rule it is not safe to move teeth rapidly, and it is far more painful. I have seen a recent example of the folly of such a course, where the pulp of a tooth had been destroyed by too great haste. In close connection with this rule comes another. Do not attempt too many things at once. A thorough study of any complicated case will gradually unfold a plan: and in that plan the first step will prepare the way for the second, the second for a third, and so on. Having determined the plan, and sure we have not planned anything impossible, we would follow the course marked out with undeviating faithfulness.

Incidentally, I may remark here as well as anywhere that no work in any field, whether general medicine, surgery or dentistry, demands more patience. Every case treated involves a partnership. The dentist and his patient must be in full agreement and have a complete understanding. If the patient be possessed of fair intelligence, he or she can be made to understand something of what is and what is to be done by explanations of the models. If you are going into partnership you want a partner of intelligence and one who will take an interest in the business. It pays to take time and great pains to make him understand what is being done. Very much depends on this, and withal on our being kind. Often when your partner is quite discouraged you can give him cheer, by taking the original models and with actual measurement show what has been accomplished. For this purpose a pair of double calipers are quite valuable, or it is but little trouble to take an impression and make models now and then for comparison. Most patients will be quite satisfied to endure, if they can only see progress. I have heard it hinted also that the partner's interest in the business will be greater if he shall have first invested a little capital—in form of an advance fee. If your partner expects you to do your part he will also attend to business. He cannot have too many irons in the fire. A school

girl must not be taking too many studies; not kept too much indoors. The general health must be attended to. As the process of moving teeth must be more or less one of disturbance, therefore irritating, hence so far exhaustive or nervous force, usual economy of nervous force is indicated. The young gentleman or lady must forego the pleasure of late hours and for the time at least be regular in exercise, rest and diet.

If any of our listeners should find a person unwilling to subscribe to strict articles of agreement, my advice is, don't begin. Annoyance else will be your portion, and disappointment your reward.

Having prepared models to retain for study and future reference—then another for the first steps in the case, and having settled matters with the patient in a business-like way, there comes next the question of ways and means—the active measures best adapted to secure the improvement desired. In considering this, very many things have to be taken into account. First, the age of the patient, heredity, the type of face, what conditions are natural and what accidental; also character of teeth and ease or difficulty with which they may be moved. Dr. Patrick has emphasized the fact that as a rule teeth with short crowns have longer roots, are moved more slowly and with greater difficulty, than those that stand well out. The resistance is greater, the leverage less in relation to the applied force.

Among regulative means there is nothing more effective for good, than extraction in the proper place and time. On the other hand there is nothing more potent for evil when done without good judgment. It is usually one of the first questions to consider, and one demanding the greatest care, whether in a given case extractions should or should not be made. Some other mistakes might be rectified, but an error here may be for life. Sometimes, by simply extracting one or two teeth, the natural forces unaided, will produce a beautiful result. By the same process, however, a deformity may be greatly aggravated, as I have seen. This one branch of our subject, extractions for regulating, is well worth an hour's consideration.

Whatever steps we take, we must look ahead and see what will be the effect on articulation or antagonism. We must never lose sight of the fact that our regulating apparatus and the retaining plate cannot be for always. To make our work perma-

ment, the articulation must be such as to hold the teeth where we leave them. Otherwise, do what we will in the way of moving them from one place to another, the tendency will almost surely be to reproduce the original deformity.

As a general rule to which the exceptions are very few indeed, no one of the six front teeth is to be extracted to obtain room in a crowded arch. Nearly always a bicuspid, occasionally the first molar should be the victim.

We may as well, first as last, disabuse our minds of the idea that there is any such thing as "regulation of teeth made easy," either to patient or operator, by any stereotyped plan or ready-made apparatus. Those delicate bits of machinery you see advertised are valuable for hints, and as indicating what we may do for ourselves. Every good surgeon will be able to make his own splints for fractured limbs. No dentist will succeed in regulating teeth who cannot make and apply whatever is adapted in each case. As every good surgeon seeks simplicity, avoiding complicated machinery, so should we in whatever apparatus we construct.

In planning and executing our work we are not to forget one thing; that our patient is not a tree, nor a machine, to be pruned pushed or driven as we please. The organs we are engaged with are sensitive portions of a sensitive economy. We have no right to make our operations extra painful merely to gain time or to save ourselves a little extra trouble. It is often the case that the same result, practically, may be obtained by different means. Indeed it is seldom if ever we are shut up to any single method of procedure. Now, as a rule, other things being equal, or nearly so, we should give preference to the course which may be pursued with the least discomfort to the patient. It is anything but satisfactory to know that we have made life a burden to our patient, that in the end he doubts if the result is worth the cost.

I shall not consume your time with a discussion of the many and various appliances that have been made use of, and with which you are all more or less familiar. I wish to speak for a few moments about the Coffin plate, so called from the fact that Dr. Coffin, of England, was the first to make public the peculiar use of the piano-wire spring. I cannot say in how far he has anticipated the various forms of plates now in use, but I am inclined to think his original ideas have been considerably elabor-

ated by others. It would be strange were it otherwise, but at any rate he has placed us under great obligations. In the hands of practical men, this wire is doing a most excellent work. The principle of its application is so very simple, and its capabilities so various, it seems a wonder (as usual with such things) that no one ever thought of it before. I would by no means disparage other means of regulating, nor cast away any of the mechanical principles. The screw, the wedge, the inclined plane, the elastic band and ligature, all have qualities indispensable in special cases. But in our judgment the wire spring possesses a greater number of advantages applicable to a greater number of cases than any one if not all the others.

First, it is simple. The wire can be bent to any curve or angle, and the force modified at will. It may be used alone, but it is nearly always employed in connection with vulcanized rubber.

Second, its use involves but little expense. I know that with most dentists this is a minor consideration, because they are supposed to make money as fast as the lumberman does chips.

Third, it is cleanly. The patient can remove and brush his plate often enough to keep it in a decent condition. This he cannot do with a jackscrew plate or any of those appliances fastened to the teeth by ligatures or cements. Unless a plate may be removed two or three times a day and cleaned it inevitably becomes offensive, vitiates the secretions of the mouth and is more or less injurious. In cases where something must be worn for weeks and possibly months, this question of cleanliness is one of considerable importance.

Fourth, the wire spring plate is generally the most satisfactory of any to the patient. It is a source of comfort that he can keep his plate and mouth clean. The wire spring force properly adjusted is more gentle and more easily borne than any other I have ever tried. It is mild, but constant and positive, not sudden—all at once, like the screw and wedge force, not intermittent and incalculable like that of the inclined plane, not teasing and tormenting like that of the rubber.

From the moment the spring is applied the power is exerted steadily, persistently; but, as the tooth moves, in a constantly diminishing ratio, so there is a measure of rest, till the wire is bent again. With all stationary appliances the patient is power-

less to give himself a rest. To this we may find an exception where the patient is permitted to turn the screw and can be trusted so to do. But this exception applies only to the degree of force. As a rule he cannot remove the plates. Of course, there are times when, and patients for whom, it is necessary to use the unremovable apparatus. This is usually in cases where the work may be done in a very few days. Ordinarily the wire spring plate may be worn while the patient is asleep, with but little if any interference with usual rest. Gently, but continuously, sleeping or waking, the work goes on. In several instances I have seen the general curve of an arch, and all the antagonisms of the teeth completely changed, without serious interference with mastication, digestion, sleep, and a school girl's general work. All this time the patient could remove the plates at will, leave them out at meal time, sometimes to recite or sing, and occasionally for an evening's entertainment. She knew just what she was doing, what progress she was making; that every possible consideration was being given her health and comfort, all of which encouraged her to be true and faithful to her part of the work.

I have here such models as I could bring with me, and a number of plates showing different applications of the wire spring. Some are of my own make, and some I have borrowed. Here is a plate, also a spring without plate from Dr. Talbot. For the idea of the coil, which he thinks especially valuable, he claims originality. I have not tested it practically but it looks like a good thing. Here are some forms which have been developed through the ingenious brain of Dr. A. E. Matteson, who seems to be never at a loss to do whatever he pleases. Dr. Matteson does not vulcanize his plate upon the wire. He makes the plate first, then applies the wire, as Tweed did his money—where he thinks it will do the most good.

A farmer and his wife went into a dentist's. "How much do you charge for filling teeth?" asked the farmer. "From two to five dollars." "And how much for pullin'?" "Fifty cents." "Mariar," he said, turning to her, "you'd better get it pulled."

DENTAL READING.

BY DR. S. W. LAKIN, EUREKA.

[Read before the Central Illinois Dental Society, Bloomington, October, 1885.]

THE lawyer, if he would win his case, earn his retainer, benefit and please his client, add luster to his name and dignity to his profession, must of necessity thumb well the statute. In every instance, before entering upon the trial of his cause, he should know just what the law is concerning the particular case in which he is engaged, and, after having fully informed himself with respect to the law he can turn his attention to precedents—the evidence adduced and the decisions rendered in cases alike, or similar, very similar to the one in which he has been retained. Where great and vital interests are depending on final results, a prudent lawyer, I think, would go still further, and before advising his client fully as to the consequences of the litigation sure to ensue, would, if the law was recently enacted, have some decided, well grounded opinion concerning its constitutionality provided the supreme court should be called upon to pass upon its validity.

The physician and surgeon to be proficient in the healing art must possess a very definite and thorough knowledge of human anatomy. He must know and be able to recognize each bone separately and fully comprehend the functions of each and the relation each sustains to the others. The origin and insertion of the muscles and the relation they sustain to the osseous structure must be fully understood—mastered. With wonderful minutia the nerves and arteries must be traced out, located; fully comprehended in their manifold offices. Is it a motor or sensory nerve? an afferent or an efferent nerve? The physician must understand the body in health and vigor before he can determine *when* or *where* there is a departure from health. The physician unable to understand the diastole or systole produced by the heart in health would prove a dangerous counselor where disease of this important organ was even remotely suspected. The general surgeon with but a limited knowledge of the osseous, muscular, venous and arterial systems would prove a very danger-

ous and unskillful surgeon, while the specialist with anything less than a broad and comprehensive knowledge of his specialty would be voted a failure. As to the qualifications of the future dentist, the profession is seemingly hopelessly divided, and this renders it a perplexing and difficult question to discuss, to what extent the intelligent, capable, skillful dentist of to-day should include in his research subjects which are or were considered exclusively within the domain of medical science, is a question about which there is a wonderful diversity of opinion. It is affirmed by many of the most skillful, eminent members of the profession; men who have labored assiduously with voice and pen, that the dentist of to-day *should* be, and they insist that the dentist of the *future will be* coequally educated with the physician in all that pertains to medical and surgical science. Then again we find men equally eminent for their scholarly attainments and professional knowledge and skill who insist that such extended preparation is wholly unnecessary; a useless expenditure of time and money, and as evidence of the soundness of their position with respect to this question, they point to the numerous specialists, the aurist, the ophthalmist, the ovarioto-mist, etc., to whom the treatment of certain ills are now generally referred for the reason that their pathology and treatment have been made a special instead of a general study. Take for illustration the operation of tracheotomy. How many, or what per cent. of the general practitioners of medicine and surgery will, to-day, hazard their reputations as surgeons and risk the life of their patients by attempting this intricate and dangerous surgical operation? An operation of which the eminent Dr. Holden says: "In the dead subject, nothing is more easy than to open the trachea, in the living, no operation may be attended with greater difficulties." When we consider the high rate of mortality attending this operation, is it surprising that the general practitioner seldom attempts it? "In two hundred and forty-five cases where the operation was performed for relief in membranous croup, one hundred and eighty-eight failures resulted, death ensued." About seventy-five per cent. of the operations resulted in death, notwithstanding the fact that tracheotomy was first resorted to by Autyllus fifteen and one-half centuries ago, and the practitioners of medicine and surgery have had all those years in which to improve on the first operation.

It is not the province of this paper to enter into the discussion of just how much of general medicine shall be included in the study of dentistry. We insist, however, that all that pertains to dentistry *per se*, shall be made a careful study. We shall not attempt to find the line of demarkation; that undiscovered, but hitherto much sought after point where the duty of the dentist ends and that of the general practitioner of medicine begins. There is no ground on which all can stand. One proposition to which all can agree, and that is, that so far as dentistry, in its highest and best sense, has to do with anatomy, physiology, pathology, therapeutics and chemistry, the education of the dentist should be not only coequal with the general practitioner, but it should greatly exceed his in all the details of those branches. In the study of anatomy, from the standpoint of a dentist, I should give preference to a thorough knowledge of the eight bones of the cranium and fourteen of the face rather than of the tarsus seven, of the metatarsus five and of the phalanges fourteen, making twenty-six bones in the foot. To the dentist a knowledge of the first is important, while a knowledge of the second will not aid him in securing a better impression, constructing a denture, or extend his knowledge or skill in the proper treatment of pyorrhœa alveolaris. A thorough and exhaustive knowledge of the foot, its bones, muscles, ligaments, nerves, arteries, etc., will not aid him one whit in determining whether he would better fill this or that tooth with gold or amalgam, or possibly, owing to its hypersensitiveness fill with oxyphosphate or gutta-percha. As a dentist, desiring to conserve his patient's best interest and add dignity to, and command greater respect for the profession of his choice, dental histology would be of greater interest and importance than a knowledge of the histology of the twenty-seven bones of the hand. The histology of the one would be the histology of the other, excepting possibly the difference in their constituent elements and the difference in the order of their development.

Those who are recognized authority on dietary regulations, maintain that mothers especially, and frequently fathers, or it may be both parents, having constitutionally bad teeth, are liable to transmit to their children, as a troublesome and undesired heritage, badly developed and poorly organized teeth. I presume there is scarcely a dentist of five or ten years practice who

has not been greatly pleased to find instances where he advised the prospective mother with respect to her diet and the influence she might exert on the dentition of her, as yet unborn child, as well as the preservation of her own teeth during gestation and lactation, to find his advice carefully and judiciously followed, and his anticipations largely, and in some cases fully confirmed by an unmistakable improvement in the teeth of the child over the condition of the teeth of children preceding it and of the same parentage. Furthermore, a decided improvement in the dental organs of the mother is frequently observed. This being true, how important that our reading, our study in this direction should be very thorough and exhaustive. Of course failures will occur, even where correct principles have been laid down with respect to what should constitute the food best calculated to develop strong, well organized teeth, bone and muscle, yet there is no occasion for discouragement. The fact that it is possible to improve the teeth as regards their density and their ability to resist the encroachments of decay, by a wise and judicious selection of food which contains a large per cent. of gluten is not confined to the members of the dental profession. Your patients, especially the more intelligent class, have heard something concerning it, and the dentist who wishes to be able to give intelligent and specific directions as to a proper diet must make the question a special study. Defective assimilation, even where proper advice has been carefully followed with respect to alimentation, may and probably does, in many cases, defeat the object sought, but as a rule the improvement is sufficiently marked to justify an honest endeavor in the direction.

The details of operative and mechanical dentistry are presented monthly in the journals, by our best dentists, and while many, or perhaps nearly all the methods described in the journals are to be found, with but slight changes, in one or more of our various text-books, yet it is quite impossible to keep abreast of the times in this inventive, progressive age, without being familiar with the current dental literature, and this familiarity can be obtained only by taking and reading two or more of our monthly and quarterly journals. Usually the greatest objection to descriptive papers appearing in the various journals is their extreme length. In many instances whole pages are devoted to a description of some operation, or perhaps as much space occu-

pied in giving the action of a certain remedy, when in both cases one-third the space, or, possibly less could have been used and the information be fully imparted. At no time does one feel more like telling what he has done and how he did it, than just after doing it successfully. There is a certain inspiration that seems to possess him at such times, which admits of his story being better told and I think generally more brief and terse than could possibly be sometime after when the fire of enthusiasm has been allowed to smolder. Now our dental journals are of value to us only in proportion as we remember and put in practice the valuable points they contain, and as memory is sometimes treacherous it is absolutely impossible to retain all that is of real value. We should devise some means of calling attention to the valuable points when we want to use them. On reading we get, from our stand-point, the theory of certain results having been reached by certain described methods, which results and methods are to the narrator no longer a mere theory, a supposition, but an established fact. To him it is something that is practicable. An opportunity presents when we wish to reduce the theory to practice, and often we are puzzled to call to mind where or when or by whom was such a remedy strongly recommended as proper treatment in such a case. Where, when or by whom was such excellent results obtained under conditions very like the case in hand. As a rule we are not desirous of reading an article, in its entirety, a second or a third time. All papers do, or should, contain a central thought, while many contain a multiplicity of valuable thoughts to which we may sometime wish to refer, then what we want is some plan by which we can find it when needed. The *Dental Register*, vol. xxxii, page 509, contains a paper by D. C. Hawxhurst, D. D. S., entitled: "An Index Resumé of Dental Literature," to which I would refer you. In our reading. I think we should take up one study or subject at a time and follow it up carefully. Many writers may express the same idea but in a different manner. A plan suggested is this, when you read a new journal and find a new idea the value of which you may want to prove by actual test, or an old idea in new dress that you want to experiment with further, mark it. In some instances the marks will embrace the article in its entirety, while in others a single paragraph, or possibly but a few lines will be marked for reference. Take an ordinary memorandum or day

book and index it by placing the letters of the alphabet on the outside margins of the leaves, and in your reading keep this little book near you and when you find something of special importance—something which you may want to use, mark it and enter it under the proper heading, giving name, number and year of publication, and you will have a very complete and satisfactory book of reference.

AMALGAM—ITS USE.

BY DR. S. F. DUNCAN, WILMINGTON, ILL.

[Read before the Central Illinois Dental Society, Bloomington, October, 1885.]

ALTHOUGH there has been much said pro and con in regard to the use of amalgam for filling teeth, there are a few facts we must look squarely in the face and then do the very best we can for our patients under the prevailing circumstances.

So long as we have a poorer class of patrons, we are under obligations to serve them in the most economical way possible. Many of us have patients who cannot pay the price of operations in gold and yet need our services as badly as those of the wealthier class. In justice to them and ourselves, what better service can we render them than to fill their teeth with amalgam?

We have no other cheap material that will answer the purpose in a large majority of cases; and by careful preparation of the cavity and material and its proper manipulation, we can make a reasonably good filling and thereby render those patients whom we have always with us, a service for which they are able to pay and that will not reflect discredit upon the operator.

At this point the question naturally arises, how shall this be accomplished?

First, the cavity should be as thoroughly prepared as possible; if a deep one it must be lined with the oxyphosphate, and especially should this be done if we leave any portion of partially decomposed dentine in the cavity for the purpose of pulp protection or other reasons. All frail walls and overhanging edges should be cut away. I would not bevel the margins of the cavity as much as for a gold filling, as amalgam has not so much edge strength and if thin attenuated edges are left they are liable to chip off leaving a rough margin which will collect food, mucus, etc., which will decompose and cause further decay. In

all compound approximal and grinding surface cavities a matrix should be used, as in no other way can the filling be properly condensed. The necessary pressure cannot be brought to bear upon the material unless it is surrounded by strong walls; and as in this class of cavities one of the walls is wanting, it must be substituted by the matrix. As nearly every operator has his own favorite form or kind of matrix, it will be useless for me to describe here that appliance.

It has been recommended that the interior of the cavity be coated with liquid gutta-percha. I have used this method in a few cases but question its practical utility, as it seems to me that the gutta-percha at the margin of the cavity will become worn away in time leaving an opening for the collection of deleterious agents. [This can be avoided by trimming away the gutta-percha at the margins before inserting the filling.—ED.] So much for the preparation of the cavity.

The alloy should be mixed with the least quantity of mercury that can possibly be used to amalgamate the mass; it should then be squeezed in a chamois skin, or what I like better, a piece of kid to set in a hard cake so that it can be cut or broken into convenient sized pieces for introduction into the cavity. I would not have so much mercury that any would be squeezed out through the chamois skin as that would not only indicate that there was too much mercury in it, but there is danger of squeezing out some of the metals that have been dissolved in the mercury and which are necessary to the making of a good amalgam.

After the cavity has been thoroughly dried with the warm air syringe, the amalgam as soon as mixed, should be placed in the cavity and packed hard with suitably adapted instruments, for if it is permitted to stand until crystallization has commenced, it will be impossible to make a good filling of it as the mass will not again unite after the crystallizing process has once been disturbed. I think this is one very fruitful cause of failure. The dentist having mixed more amalgam than is needed for one cavity, prepares another, filling it with the amalgam left over from the last filling, which by this time has begun to crystallize and is no longer fit for use. In finishing amalgam the same care and thoroughness should be exercised as if the fillings were of gold; and this can best be done at a subsequent sitting, after the filling has thoroughly hardened.

Just here I wish to say a word in regard to the instruction

given in our dental colleges, in many of which the use of amalgam is not taught; the faculty, I suppose presuming that any one who can make a good gold filling can also use amalgam successfully without any special instruction in reference to it. Now this is certainly a mistake. The process is in many respects different, and to fill a cavity properly with amalgam is in many cases almost as difficult as to fill it with gold, though not nearly so tedious. I have seen students from dental colleges where the use of amalgam was not taught who could make a fair filling of gold, and yet when an amalgam one was to be inserted the material was mixed into a sort of rather stiff paste and literally plastered into the cavity, no attention whatever being paid to condensing it or to the proper contour. Such fillings cannot be expected to save teeth, and as a large majority of these students will probably have occasion to fill a good many teeth for the poorer class of people, it is simply justice to the students and their patients that they be taught in the dental schools how to use amalgam in a proper manner.

There has been much said in regard to its shrinkage, its expansion, its liability to bulge from the cavity, its tendency to assume the globular form, its objectionable color, etc. It has been charged with producing neuralgia, paralysis, ptyalism, nervous prostration and of producing destruction of tooth substance by galvanic action. It has been charged with being such a deadly poison that even the life of cock-roaches could not be sustained in the presence of amalgam fillings sixteen years old; and yet the material still survives and like our proverbial mother-in-law it seems to have come to stay. It is the only, at least the best cheap filling material we have at the present time. I have no doubt almost every operator has many times wished for a better one that could be inserted at a moderate expense to the patient; but until we do get a better, let us do the best we can with what we now have and let the coming dentist be thoroughly instructed in its use.

PROFESSOR W. H. MORGAN has been appointed a Commissioner of Indian affairs. This accords with "the eternal fitness of things."

DENTAL MATERIA MEDICA—OLD AND NEW REMEDIES.

BY A. W. HARLAN, M.D., D.D.S., CHICAGO.

[Read before the Central Illinois Dental Society, Bloomington, October, 1885.]

It is said that fashion has much to do with the prescribing of certain remedies in the general practice of medicine. Whether the same could be said in the practice of dentistry at the present time my hearers must determine. When I began the practice of dentistry, not yet twenty years ago, very few remedies were to be found in the cases of practicing dentists. Arsenic, morphia, laudanum, chloride of zinc, nitrate of silver, creosote, carbolic acid, tincture of iodine, chromic acid, Labarraque's solution, tannin, sulphuric acid, aconite, blood-root, alum, valerian, arnica, aqua calcis, camphor, white oak bark, blue vitriol, Monsel's solution, nut galls, krameria, myrrh, oil of cloves, cinnamon, acetate of lead, caustic potash, permanganate of potash, pyrethrum, mustard, peppermint and a few others constituted the whole of dental materia medica. Very few dentists made use of the whole number above enumerated. Many not half, and the vast majority did not use more than half a dozen in this list, but they treated all diseases presented with their simple tinctures, decoctions, and essences, without much regard to their value for the relief of the case in hand. A change has slowly taken place since then, and we find that our materia medica has grown with other departments in the practice of dentistry. We would as soon expect to note the absence from a well equipped office, of the dental engine, as to learn that certain new remedies were not in the medicine case. Who can get along now without iodoform, menthol, eucalyptus, H_2O_2 , eugenol, terebin, iodide of zinc, aluminum chloride, resorcin, cocaine, tonga, cannabis indica and hosts of other remedies which have gradually been introduced many of which are never to be abandoned until something better can take their places. I am not of those who cast aside as worthless the old sheet anchors, unless there can be substituted equally efficient and pleasanter smelling and tasting remedies to take their places. We understand, I think, the why and where-

fore of using remedies better than formerly, and are not in the habit of using or prescribing drugs unless we expect to obtain a certain result. It is to the increase of our knowledge of the causes of diseased conditions that we must ascribe the multiplicity of new remedies. Many drugs now in use are prescribed because we get certain effects from their systematic administration, not because we understand their mode of action. This is not scientific but it is the best we can do until we more fully understand their physiological action.

It is certain that we use carbolic acid for its local anæsthetic property, because it is antiseptic, escharotic, stimulant and styptic. It may be narcotic but dental surgeons do not use it for such an effect. It may possess other properties in combination with other remedies, such as caustic potash and glycerine or water, but it is still on trial in the above combination, and time alone will tell its value when thus compounded. The great need of the present hour is a safe and certain local anæsthetic for obtunding sensitive dentine. Whether such a remedy has been discovered we must await the verdict of our patients. Many remedies have been used and proposed in the past fifty years and much success has been claimed for certain compounds and simple substances, but it is not certain that a sure, quick acting and harmless remedy has yet been placed before us. Certain remedies which require time to produce the desired effect, we have already before us, but they do not act quickly enough. Alcohol, glycerine, chloroform, tincture of aconite root, aconitia, carbolic acid, Robinson's remedy, chloral and camphor, the various preparations of cocaine, cannabis indica, chloride of zinc, menthol, veratria, sulphuric ether, morphine, sulphate of atropia, iodoform and a few other drugs have been recommended. Some are valuable in certain cases. They must all give way however to cocaine and cannabis indica. Of the two latter my own preference is decidedly for cannabis indica. I began experimenting with a weak tincture then a stronger one until I settled on the use of the fluid extract, Squibb's, or the normal liquid cannabis indica of Parke Davis & Co. It seems at present impossible to obtain a more concentrated form than the fluid extract. I have experimented with cannabis in solution but cannot report my results at this time. It should be applied in the cavity after the rubber dam has been adjusted. When the necks of teeth are

sensitive or the gums are tender they can be benumbed by painting with the ordinary tincture, after which a ligature or clamp may be applied without producing pain. I do not expect to entirely obtund sensitive dentine in less than five minutes, and then only by repeated applications. The patient should not be allowed to swallow any considerable quantity, as the medicinal dose is v to x minims (Brunton). It may do to extract some roots and teeth by using an application like Von Bonhorst's, three to five minutes will suffice in most cases. I have extracted painful pulps by its use without any discomfort to the patient. I do not believe that it will always produce this result for all patients. It is not injurious to the structure of a tooth or contiguous parts. A drop of the tincture injected into a pyorrhœa pocket a minute or two before removal of germinal deposits will be found very efficacious; by painting the surface of an abscess, which must be opened, a few minutes before introducing the knife; you will find that very little or no pain will be felt.

GEOGRAPHICAL DISTRIBUTION OF DENTAL CARIES.

BY E. G. BETTY, D.D.S., CINCINNATI.

[Read before the Ohio State Dental Society, Chillicothe, October 30, 1885.]

I HAVE heretofore hesitated to bring before this body the subject now up for consideration, for the reason that I was doubtful of the practicability of carrying out such a plan as I propose. I have learned that Illinois and Dakota have taken some action in this regard and that has encouraged me to present at this, the first meeting of the re-organized State Dental Society of Ohio, a few suggestions as to our duty in the premises and the manner of accomplishing it.

As all are well aware, data collected from divers sources, tabulated and systematised, become what is called statistics; and statistics now-a-days, comprise the bulk of our verified and available knowledge. For this reason, it becomes necessary for us to collect all the information we can upon the subject of the geographical distribution of dental caries in our State, in order that we may gather from its studious consideration, such knowledge as will enable us to bring to bear upon the disease we assume to

treat, a more discriminating intelligence of its etiology, progress and results. This we can do only when we have at our command a mass of comprehensive details that will enable us to account for phases, conditions and symptoms that give no surface indication of their origin, yet, when all the antecedents are scrutinised, much that is obscure, reveals itself to our gaze, and in the nature of things, becomes more readily amenable to treatment. Our views are daily becoming broader and deeper, and we seek information from many sources that heretofore have had but little weight in our council.

Dental caries is not so simple a thing as it would seem to be; it is not only a question of the decomposition of fluids and solids, liberating gases that re-combine to form acids which break down, dissolve or disintegrate tooth substance; neither is it solely a matter of the formation of an acid by fermentive fungi. It may be one or other of these, or both, or neither. It is because we do not know this, that we must look further into the antecedents of the individual, his race, his family, his habitat, his food, the climate he lives in, the annual rainfall, the maximum, minimum and mean humidity, temperature, etc. These are the things we must take into consideration and we can do it if we will, and that too without such a large measure of work for any one of us as to discourage us by its amount or deter us from engaging in it. Concerted effort will accomplish almost anything, and in this matter will add a stone to the foundation of the profession we are building. Let us build well while we are at it.

With these few remarks as an introduction, I now wish to call your attention to this blank I have prepared for recording in a tabulated form, the condition of each mouth as regards decay of the teeth. I think I have succeeded in getting one that is at once simple, complete and exact.

The first column to the left is for the number of the examination or case, whichever you choose to call it; the second column for the age of the patient; the third for sex; the fourth for the nationality, or parentage, as in this country there are vast numbers who are native born, yet possess none of the characteristics of the true American.

All the columns numbered from 1 to 32 inclusive are for the complete denture of adult life, each tooth thus having a separate space and a distinct number. No. 1 represents the third molar of

the upper right side, starting from which point, the succeeding numbers represent all the teeth of the upper jaw in their order, around to the third molar on the left side, designated as No. 16; returning, the teeth of the lower jaw are numbered from 17, corresponding to the third molar of the left side, around to No. 32, the third molar of the right side. According to this nomenclature, numbers 1, 2 and 3, represent the molars of the upper right side; numbers 4 and 5 the bicuspid; number 6, the cuspid; numbers 7 and 8, the lateral and central incisors, all of the right side; and so on for the thirty-two teeth in the order mentioned. This system of designating the teeth is doubtless familiar to all who use a registering dental ledger, and it was for that reason I adopted it in the blank. The last column denominated "remarks" is for the purpose of noting down any peculiarity of the individual, his health, temperament, quality of teeth, etc. To locate the decay very accurately and yet in a simple manner, without consuming an unnecessary amount of time, the various surfaces of the teeth are designated by the first letter as follows:—

C—Crown.	B—Buccal.
Ap—Anterior proximal.	P—Palatal.
Pp—Posterior proximal.	Li—Lingual.
La—Labial.	X—Missing teeth.

The cross is to be used to point out such teeth as are missing and should be written in the column corresponding to the teeth that are absent in the particular case. There is space on the blank, provided for the dentist making the examination, to record his name, town, county, State and date; the month and year being sufficient.

It will be observed that a single line across the sheet, from left to right, is all that is required to make a full record of each case and with the least possible expenditure of time. The number of cases to the blank, 20, being a decimal number, will greatly facilitate the compilation and footings of totals, etc.

A probable objection with many, is the time consumed in making such a record of cases, but a little familiarity with the figures corresponding to the teeth, will greatly facilitate the examination and reduce to a minimum the amount of time required to record it upon the blank.

It often happens that a dentist will consume a large part of a day in merely examining the mouths of people who present

themselves at his office, a good many of whom do not return, neither do they remunerate the dentist for the advice given nor the time spent upon them. If, however, they see him make a record of the examination of their mouths, he will not infrequently be asked if there is any charge, and in that way he will glean many a stray dollar in the course of a year and besides have the satisfaction of assisting his State Society in an important work, in addition to having a complete record of the amount of work to be done in any given month in case he should be called upon to make an estimate as to the probable cost. This may be an inducement to many a dentist to fill the blanks where otherwise he would not care to undertake it, preferring to leave it to his more ambitious neighbor who regularly attends the society meetings.

It is unnecessary for me at this time to enumerate the many uses to which such a body of statistics can be put, nor to mention the manner in which they are to be studied, further than that, they are to serve a scientific purpose when studied in connection with locality, climate, food, etc., etc.

If the Society sees fit to consider this matter and will take it in hand, its large membership and larger influence will enable it in the short space of a couple of years, to collect statistics from hundreds of thousands of cases distributed all over the State.

The blanks can be prepared at a comparatively small outlay and distributed either by the corresponding secretary or some one appointed for the purpose. He can also receive or collect them from the various members after having been filled out and return them to the Society.

The labor of compiling the totals and arranging reports by counties, will be somewhat large and ought to be divided amongst a committee, appointed or elected for the purpose. However, these matters will largely determine themselves as they arise.

This collecting of statistics is very necessary and is being taken up by one or two other States so that it is important for Ohio to follow as soon as possible.

It will not be a great while before other States will fall into line and then the profession will be in possession of a mass of information of incalculable value.

NERVOUSNESS, HEREDITARY AND ACQUIRED.

BY E. PARSONS, D.D.S., SAVANNAH, GA.

[Read before the Ohio State Dental Society, Chillicothe, October, 1885.]

EVERY dentist of experience knows that one of our greatest troubles is the management of nervous patients. By better understanding the various phenomena of their physical conditions, especially nervous manifestations, we may do much to quiet them by kind words and proper stimulation. If we fail to do this we lose their confidence without which it is very difficult to operate successfully. In general terms we divide the nervous system into two classes, the sensory and motor; although both are wisely, provided by our maker for our good, they are often greatly abused. It is the opinion of many of our oldest physicians, and dentists, that the abnormality of the nervous system of our people is on the increase. If this is so, the cause should be known and the laws of life obeyed. It is my purpose in this paper to present for your consideration some of the reasons why there is an increase of nervous affections of our people, affecting the whole system, especially the teeth.

Primary causation is often mysterious, and judged by its effects, which are often misleading, by reason of reflex action. Facial neuralgia may be caused by a tooth even when perfectly sound. If we mistake the cause, we labor in vain to effect the cure desired. It is only by reading, observation and experience, that we are able to make a correct diagnosis of any given case. Good and useful teeth have often been sacrificed for want of a better knowledge of the nervous system.

The nerves have their roots in the brain, the great sympathetic nerve, ganglia, and spinal cord, the projections from these ramify to every part of the body, giving to us sensation and motion. If one class of these are unduly exercised to the neglect of the other, it will make a nervous somebody, or a knownothing.

All the various animals below man are endowed with instinct and are unprogressive, the succeeding generation cannot learn anything from the past history of its race, their nervous constitution appears to remain the same from age to age, not being

endowed with the faculty of rationality, their governing principle is impulse. Not so with man; man being endowed by his maker with the principles of liberty and rationality, can know the history of his race for ages past, and has capacity for endless progression, in all that constitutes true manhood. To realize the nervous degeneracy of our people, we must compare the present with the past, and note the different circumstances of both body and mind. In this paper I will consider my subject in the following order, viz: 1st, stolidity; 2d, nervous excitability; 3d, nervous sensitiveness; 4th, nervous depression or exhaustion.

First, nervous stolidity. Of this we can number only a few amongst all our patients. Much of their suffering is inherited from their parents, and they are taught to bear pain without a murmur; all such give us no trouble in performing any operation desired. As a rule our American Indians are of this class. As I wish to comment more at large on the influences of our modern civilization, I note thus briefly this division of the subject.

Second, nervous excitability. It is sufficient for my purpose to take the American revolution, to which we are indebted for the enjoyment of our free institutions, as a starting point from which there has been a gradual increasing nervous excitability of our people. The great advance in the arts and sciences of our day, are mainly due to the increasing nervous excitability of our people. It has manifested itself in almost every department of human industry. Where to-day would be our steamboats, railroads, telegraph, telephone and electric lights, and our own useful appliances, so highly prized in performing dental operations? Compare our present status with what it was before these inventions, and if you can find a better reason for the establishment of our dental colleges and dental societies, raising our standard of excellence in every branch of our profession, thus quickening the intellect by reason of an increased nervous excitability, I shall be glad to know it.

Again, our people of this class are more energetic than any other, and what they cannot do individually, they attempt by associated enterprise. Usually they suffer acutely from local irritation, and if a tooth be the cause they hasten to the dentist and willingly submit to anything that will give them speedy relief.

Third, nervous sensitiveness. By this I mean all those whose nerves are easily disturbed, both by mental and physical

causes. A much larger proportion of my patients are of this class now than was the case forty years ago. In this short essay I can only enumerate some of the causes that have produced a marked and growing change in the nervous condition of our people. Amongst the most prominent, there are three easy of observation :

1st. Hereditary predisposition.

2d. Education, domestic and public.

3d. Reading exciting novels.

First, hereditary predisposition. It is an old adage that "like begets like." Parents of a sharply defined nervous organization are usually very sensitive; their children are difficult for us to manage, and as population increases this class increases also. We often see children in the same family differing very widely in their nervous temperament. In this case you will find about the same difference between the father and mother. In my opinion, this noticeable fact can be accounted for only on the principle of magnetic phenomena, varying conditions at different times of conception and gestation.

Second, education. On this division of my subject I will briefly consider the moral, intellectual and physical training of children. If these three for an orderly, well developed character could be utilized harmoniously, both in domestic and public education, from infancy to maturity, we should soon have a far more vigorous population than we now have; but most unhappily this is not the case. The present system of education is very defective in this respect; the mother who for fear the child will soil its clothes, will not allow it to creep on the floor or play in the yard and treats it like a doll-baby, makes a great mistake, gives it little or no chance to develop its muscles and invigorate the whole nervous system. The way children are generally cared for and treated, without the least regard to the laws of health, is it any wonder that so many die in infancy. The infant should receive its proper nourishment at regular stated times. Children should not be stuffed with all sorts of things. If children are sent to school before they are seven years old, the kindergarten system is the best now known or in use. By this system the children's whole course is to them one continued play, and they unconsciously acquire a love for useful knowledge and at the same time freely exercise the brain and muscles. Our public and pri-

vate schools may satisfy the present state of public opinion, but they are managed without a due regard to the development of a good physical constitution. Every school should have a room or play ground with all suitable fixtures for gymnastic exercises together with moral and mental training or culture; this, although it would not increase their nervous sensitiveness, would prepare them to better bear the ills of life. This class of our patients usually have very sensitive teeth, and dread a visit to the dentist. They usually procrastinate until compelled by severe tooth-ache, and you all know that this is the worst time to operate satisfactorily. Again, I have noticed very delicate, sensitive mothers unconsciously impress upon their offspring, much of their nervous sensitiveness, and it is difficult to clean out a simple cavity without making them cry, which greatly interferes with the operation. My experience with children has forced me to believe that the present system of rearing and educating them is very defective, and can be greatly improved in developing true manhood. If a change of base is not made, the physical degeneration of our people is certain to continue.

Fourth, novel reading. The novels that punish vice and reward virtue, are useful in a social and moral point of view; but those that unduly excite the imagination and the feelings, influence the passions, keep the whole system in a feverish condition, not only destroy a taste for useful knowledge, but are like many other forms of dissipation, destructive to a healthy condition of the nervous system, and contribute in no small degree to the increasing nervousness of our people. We all have the organ of mirth more or less developed, and when not indulged in to excess it is a healthy exercise for both body and mind.

Nervous depression or exhaustion. Among the many causes that produce depression of the nervous system, I will consider only two, namely, sickness and the abuse of the physical organs. I use the term sickness to designate both acute and chronic diseases. The one is slow and the other is quick in its work, in debilitating the whole nervous system.

The disease known as consumption is one of the most insidious our people are liable to, and carries many to a premature grave. The depression of the nerves is gradual, but unavoidable. Many dentists while operating, are not careful in the position of the body, cramp the abdominal muscles, which should always expand

and contract freely, with every breath while operating, or pain in the side will, as is often the case, be the result. The disease known as dyspepsia, so common amongst our people is a great depresser of the nerves; those afflicted with this disease are unable to digest sufficient food to keep the various organs of the body in a healthy state. Masturbation, which so many of our youths indulge in adds largely to the number of enfeebled, nervous constitutions. The abuse of the sexual organs cannot escape its evil effects.

It is no easy matter to operate on the teeth of our extremely sensitive, nervous patients. If the observation of one who has been fifty years in practice, is of any value to my loved professional brethren, they are welcome. The genius of profession has excited its utmost to find an obtunder that would in all cases produce the desired effect. I have experimented with all the articles said in our periodicals to be good obtunders, amongst the latest of which is cocaine, and others not in the books, and I find no article entitled to our confidence. The same article with some seems to be effective, while with others it has little or no effect. In some cases the inhaling a few breaths of nitrous oxide gas, or Mayo's vegetable vapor gas, will allow the operator to proceed causing but very little or no pain. I have often found hard pressure on either the labial or lingual surface of the affected tooth will render the excavation of a cavity quite bearable.

It is natural that our nervous patients dread a dental operation. It is gratifying to them if we appear to sympathize with them, and we should use every means to quiet their fears except deceit, for if we deceive even a child, it will not believe anything we may say to it afterwards.

By knowing the cause of the downward progress in the degeneracy of our people, it is the duty of both physician and dentist to enlighten the public on the subject, and point out the means for improvement. If our food and drink does not contain sufficient of all or any of the chemical elements for building up and sustaining the tissues, they must be artificially supplied. The inferior structure in children's teeth is fearfully on the increase, but an efficient remedy is known and if persistently applied, will in time remedy the evil.

You are all doubtless acquainted with the different anæsthetics used for the purpose of extracting teeth without pain, and this

is a proper subject for discussion at any state dental society meetings. We all know that there are many who have not the courage to submit to the operation without it. In my essay read at the last meeting of the Georgia State Dental Society, published in the *Dental Luminary*, August number, 1st and 2d pages, you may learn all I have to say about it, and I need not repeat here. Dental colleges lay the foundation, but associated effort, and our periodicals rear thereon a noble structure of scientific dentistry. Seek after truth; possessing it we have power for good or ill.

Thanks for the kind invitation of your President to meet with you, but as I cannot be present, I send this my unworthy substitute.

Correspondence.

"I charge you that this epistle be read."

GOLD LINED RUBBER PLATES.

EDITOR JOURNAL:—For several years past it has been my custom to line all rubber plates on the palatine surfaces, with pure gold foil, ranging from Nos. 4 to 60 and in one or two exceptional cases No. 120. Some dentures lined with the heavier foils have been worn two years. In some cases there is very little loss of gold, while in others all, or nearly all is gone, owing, I think, to the method of lining. Various methods have been resorted to, but the one last adopted has been most successful.

Of the red rubbers experimented with, Smith's "15 minute," retained the gold best, owing, probably to its greater plasticity. More recently I have discovered that Ash & Son's pink excels all others for the purpose, in that the gold adheres more tenaciously. Want of strength, however, unless made heavy and cumbersome, is a decided objection, to which may be added its greater cost. To obviate these objections I dissolve pink rubber in chloroform, and, after packing the flask in the usual manner for a rubber denture, I bring the sections of flask almost together, separate and remove the cloth from the rubber, a piece of the cloth, that found with the rubber, interspersed between the rub-

ber and cast, to prevent its adhesion. Now take a sheet of gold foil, of the number desired, (depending largely on the price charged for the work,) cut a pattern for a lining and burnish it down well on the cast, which has previously been touched here and there very slightly, with shellac varnish, to keep the gold in place. Then wash the palatine surface of the rubber with the solution of pink rubber, it should be a little thicker than mucilage, use dry heat to close the flask. I find the gold adheres with greater tenacity when put on in this way than any other I have tried. In mouths where such plates are worn there is less sponginess of gums, less redness, tenderness and inflammation of the mucous membrane. Both lingual and palatine surfaces may be covered with gold, and when done, present a very neat, cleanly appearance. Patients appreciate such work and are willing to pay the extra cost involved in its construction.

EUREKA, ILL.

S. W. LAKIN.

Compilations.

"Gather up the Fragments."

A NEW STYPTIC.

THE Berlin correspondent of *The Lancet* writes that some time ago a French physician, Dr. Mennier, reported that a priest, who frequently suffered from bleeding at the nose, having been attacked by a fit of such hemorrhage lasting for nine hours, had, after trying unavailingly all possible remedies, at last stopped it by drinking an infusion of the common nettle, *urtica dioica*. Thereupon Dr. Rothe made some experiments with the external application of the juice of the said plant. Young plants gathered in spring were cut up (stalks, leaves and blossoms), macerated for a week in alcohol of sixty per cent., pressed out, and filtered. It was then a dark greenish-brown fluid of aromatic smell and taste. Applied by means of cotton-wool to bleeding wounds, it promptly arrested hemorrhage, unless large vessels were affected, especially parenchymatous bleedings and those from smaller blood-vessels. The blood was converted into a soft, consistent, but not crumbling clot, which seemingly protruded

into the opening of the wounded vessels, thus arresting hemorrhage. In cases of bleeding from the nose, a small cotton plug steeped in the liquid is pushed up the nostril high enough to come into close contact with the bleeding surface, and then, if necessary, fixed by means of a dry plug. Should the hemorrhage cease immediately, the plug may be cautiously moved after the lapse of about ten minutes. If some blood oozes out through the plug, it will have to be replaced by a fresh one. In several hundred cases thus treated the bleeding was always arrested within half an hour at the very latest. Quite striking was the effect in the case of a young man bleeding from the lower jaw, after extraction of a molar; for the hemorrhage had lasted for three days incessantly, in spite of compression and the application of external and internal styptics. For years Dr. Rothe has used this "*liquor hæmostaticus*" in all operations with predominantly parenchymatous hemorrhage, as in herniotomy, tracheotomy, smaller amputations, splitting of the cervix uteri, etc., in the same way as the solution of sesquichloride of iron was formerly employed, but with the great advantage that the blood-clots did not so easily crumble and decompose. The nettle solution has, on the contrary, on account of its alcoholic component, antiseptic qualities; and it is especially indicated in simple cuts of the skin not requiring suture; for not only will the bleeding promptly cease, but by the application of cotton-wool steeped in this solution the wound will speedily heal. The superiority of this new styptic is, above all, evident in nonpuerperal hemorrhage from the mucous membrane of the uterus. If, as is generally the rule in cases of mucous polypus and endometritis hemorrhagica, the orifice of the uterus is sufficiently wide open, an injection of from five to ten grammes of the liquor, after previous cleansing with a cold or warm solution of carbolic acid, will produce a permanent stopping of the hemorrhage, except where the mucous membrane is too much degenerated. Should the removal of an excrescence by operation or scraping (with the blunt curette) become necessary, the wound can be cleansed with a warm solution of carbolic acid, whereupon a plug of cotton-wool steeped in the nettle infusion, with subsequent injection of the same, will, in nearly every case, produce the speedy cessation of the hemorrhage.

Editor's Specials.

"Write the Vision and make it plain."

FAMILIAR CHEMICAL ACTIONS SIMPLIFIED.

UNFORTUNATELY the study of chemistry is falsely estimated. In many, if not in a majority of schools, the faculties talk and act as if they wished it to be understood that chemistry is a dry study, and, at the same time not very important. In some schools the "per cent" in examinations is lowered, with reference to chemistry, so as to accommodate the candidates for degrees, where their instruction in this science has been neglected, or very defectively taught. Extensive and long continued opportunities for observation and investigation in this direction have been industriously improved; and we can freely say that we have not found a majority of fresh graduates from medical schools with clear and well-defined ideas in relation to even the laws of combination and the doctrine of chemical equivalents. In other words, they were not able to recognize chemistry as a science. A multitude of chemical *facts* had been acquired in some cases; but these do not prove a knowledge of the science.

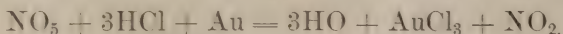
With a state of affairs as described above, it is not strange that we find in our profession, as is often found in the medical, a disposition to rely on recipes and formulas, rather than on principles and science. All are familiar with the California woman's story about training a Chinaman to make a pudding: She made one in his presence; and as the first egg looked suspicious, it was thrown aside with the slop. Months afterward she found that AN SIX had faithfully put the first egg in the slop without reference to its condition, every time a pudding was ordered. He was working by formula, or recipe, and not by science; and he has far too many imitators.

When we came into the dental profession we failed to find a dentist able to tell why he used salt petre in refining gold by one of the dry processes, or why chloride of mercury, or sulphide of antimony. At the first meeting of the Mississippi Valley Associa-

tion we had the good fortune to attend, two of the members tried to explain the blowpipe, and spoke of its "oxidizing flame" and its "reducing flame," but no one could explain the agency or the principle in either process. Of course some understood these things then, but we were not fortunate in finding them. And it is encouraging to be able to testify to the great progress made in these things already.

A key to a proper understanding of many chemical processes is found in the fact that most, if not all chemical agents have two distinct conditions of existence, in which they manifest properties so very dissimilar that they often fail to be recognized as identical. A good illustration is found in the well known element phosphorus. Ordinarily it is highly combustible; but without addition to or combination, it can be so changed that it can scarcely be burnt. The term *allotropic* is used to describe such changes.

Another illustration is found in the process of dissolving gold in *aqua regia*. Let chlorine gas, as ordinarily prepared, be dissolved in pure water to the point of saturation, and it is found to dissolve gold very slowly. But when gold is put into *aqua regia*, the solution is rapid, yet chlorine, and chlorine only, is the dissolving agent. The action is clearly illustrated by an equation:



By a brief explanation this equation can be made plain to the non-chemical reader, and then he can interpret any similar one.

The first half represents one equivalent of nitric acid, three of hydrochloric acid, and one of gold. Three equivalents of hydrogen, in the second compound symbol, take three equivalents of oxygen from the first, thus forming three of water, 3HO. The three of chlorine, in the second, take the gold, forming the terchloride, AuCl₃. The nitrogen, in the first, by losing three equivalents of oxygen, is reduced to nitric oxide, which is a gas, and it escapes in the form of NO₂, as is seen in the small bubbles rising from the gold. Now all this is very simple.

Let it be borne in mind that when the chlorine united with the hydrogen to form hydrochloric acid, used in the *aqua regia*, it was in its active, not its quiescent state. The word passive is used instead of quiescent, but the latter term is probably more in

accord with the facts, as it is doubtful if any chemical agent is absolutely passive. Now, the chlorine being active when it took the hydrogen, it remains active in combination, and is so found when forced to let it go. In this fierce condition it seizes the gold, in the absence of anything it likes better. And in this state of liberation it is said to be nascent. It is being born. It is found in this state always in *analysis*, or separation; but, in being formed, as when hydrogen and chlorine combine, the process being called *synthesis*, it is also active, and the term *nascent* was adopted more with reference to this process, as expressive of the active state.

These principles apply to chemical agents in general; and when they are understood every process in chemical action becomes interesting.

How many use peroxide of hydrogen, and often with success, without any clear ideas of how it acts?

Oxygen is soluble in water, and a watery solution of this gas is slightly useful as a disinfectant. This is only because a very minute portion of the oxygen is active, and the inefficiency is due to the fact that most of it is quiescent, or passive. But when the peroxide of hydrogen is applied, slight affinities are able to take a part of the oxygen from the hydrogen, and thus liberated, it attacks the combustible matter in contact, with all the fierceness of its active state, and the complete burning of carbonaceous matter is proved by the frothing caused by the escape of carbonic acid gas. The objectionable matter present, as in an abscess, is burned into carbonic acid, water, and nitrous acid, which latter is itself a disinfectant, by virtue of its affinity for alkaline substances. All the results of this oxidation are soluble in water and therefore easily washed away.

To designate oxygen in this condition, it is described as nascent, active, or is called ozone. And from its quiescent state to this it may be changed by passage of static electricity, by heat, by liberation as above described, and by will-power, as when stored in the red corpuscles of the blood.

The teachings of this article may be too minute, and slight repetition may be found, but let it be considered that many who are well versed in other professional sciences, are babes in chemistry.

AN INTERESTING CASE IN PRACTICE.

READER, is it fair to report a case like this one, in the following letter, and then ask a poor fellow to give an "explanation thereof"? *Explanation*, mind you. Bringing it off its plane, and setting it up edgewise, so that it can be plainly seen. We are reminded of the schoolboy who was questioned about his sister's beaus, and replied "Them's all axed out of the larger catechism." But without explaining, possibly we can say something that will stir some thinker to give us the explanation. But here is the letter.

CHICAGO, Nov. 3d, 1885.

DR. WATT:

Dear Sir:—Will you please make a note of the following case in practice, and let us have your explanation thereof?

About six years ago I made a full upper and lower temporary set for a physician. Afterward I made the permanent of continuous gum. The upper he has worn without trouble; but the lower has been a continuous source of trouble. I had to cut away from time to time, to allay irritation, until at last I found it necessary to make a new plate. This I made of Watt's metal, of course fitting was as accurately as it was possible to make it. The same experience continued,—constant cutting away for relief. Finally he found it necessary to take a two month's vacation, as he had suffered severely from dyspepsia, for several years. He went to Dakota, and spent his time out of doors. He recently returned, and says he "don't know that he has artificial teeth." There is no discomfort, he eats "hard tack," and his troubles seem ended.

A year ago he went to the sea coast. Was gone two weeks and returned with similar results, but had been home only a week when the irritation began again. He said then that those two weeks were the only ones in which he had been free from irritation by the lower plate.

Another peculiarity of this case is that he cannot retain his upper plate, without nausea, except when the lower plate is in place. Then there is no nausea whatever. L. P. HASKELL.

Some of the difficulties in this case are common, and others

are unusual. Bear in mind that the under jaw is constantly changing its form, sometimes very slowly, and often with considerable rapidity. It becomes longer and less curved. This spoils the fit, and irritation results. It is constantly becoming flatter—the ridge being less sharply defined. The plate must settle down, and often on a ridge too thick to extend into its cavity. The pressure is then mainly on the margins, and irritation occurs.

But this patient had been dyspeptic for years, and in this fact lies most of the “explanation,” but we may not be able to dig it out. In chronic failures of the nutritive functions the blood is impoverished, and in such cases the relative proportion of fibrine is above normal. Of course its quantity is lessened, but not to the same extent found with the other constituents of the blood. In this condition local inflammations are easily established, especially in fibro-membranous tissues. The pressure of even a well-fitted lower plate, partly from its own weight, but mainly from mastication, may be thus able to set up irritation and even inflammation. In some of his lectures or writings, Sir Astley Cooper calls attention to the fact that in chronic dyspepsia, chlorosis, anemia, and other cases where the blood is much impoverished, it shows the buffy coat, as in inflammatory disease; and this he ascribes to the unduly increased proportion of fibrine.

The patient in this case took a vacation, went to non-malarial regions, oxygenated his blood, made better fibrine, had a better appetite, digested and assimilated his food, with a fair degree of success, enriched his blood and overcame the tendency to low inflammatory action, from impoverished blood, and, his plates fitting, he could use them as if a part of himself.

But with only the upper plate in his mouth, he has nausea. That is not uncommon. Irritation, especially from extension, of the nerve fibres in the posterior part of the palate, causes nausea generally, if not always. The suction necessary to hold up an upper denture draws on these minute nerves. But when the lower denture is in, this is most of the time relieved, by the pressure of the lower against the upper teeth, suction alone being relied on to hold in place but for brief periods.

We hope our scattering remarks will not prevent some one who can, from giving a correct and clear explanation of the case. Our principal aim is to stir up such ones to duty. The pages of the *JOURNAL* are open for this effort.

But give us an easy conundrum next time.

THE CHILLICOTHE MEETING.

THE Ohio State Dental Society has met and adjourned. That which occurred between the two acts is set forth elsewhere. In many respects the meeting was an excellent one. Of course the consideration and adoption of a constitution and code of by-laws proved tedious and monotonous, but no impatience was manifested, as all present seemed to recognize the work as important, and indeed necessary. The first report of the committee provided for active, associate and honorary members; but after due consideration, the committee asked to have the document referred back, and the associate membership provision was stricken out. Now there are active and honorary members, the former composed of Ohio dentists in active practice, and the latter of honorably retired dentists of Ohio, and those of other states and countries who may be elected. But all this is clearly set forth in the constitution.

The best of feeling prevailed throughout, and no one seemed to have even a hatchet, and far less an ax to grind.

Among the professional brethren from other states we had Professor A. O. Rawls, of Kentucky, and Prof. A. W. Harlan, of Chicago. The former read a carefully prepared paper on *Pyorrhea Alveolaris*, suggestive of thought and action. Prof. R. is a rapid speaker, and our sense of hearing was, at the time, impaired by catarrhal irritation, hence we failed to hear all his remarks. But, as he explained, the principal portions of the paper had been read elsewhere and were in print. Having seen the printed pages, we could all the better appreciate additional thoughts given first at the meeting, so far as able to hear them.

Prof. Harlan explained that till within a few days he had not known that a paper was expected from him, hence he had but a few lines penned on the subject. These few, however, as he read them, with comments, were found to consist of the cream of science, as it pertains to this disease. These brethren added much to the interest of the meeting.

But all cream is too rich a diet, so "Yours respectfully" poured in a heavy supply of skim-milk, for which he has been adequately punished by loss of voice. A good man was struck dumb for the sin of unbelief (see 1st chapter of Luke), and why

not a bad one for the sin of presumptuous loquacity? Law is law—if you stick your finger in the fire, it will be burned.

Several papers were read and were referred by vote to the *Dental Register* and the OHIO STATE JOURNAL. Mr. Beer, of England, gave us a wonderfully well condensed account of dental statistics, which we hope to lay before our readers. As will be seen elsewhere, the next meeting is to be held at Toledo, the financial and business home of the JOURNAL, and that is all the evidence needed that the society and its guests will be kindly greeted and kindly treated.

Several brethren from Kentucky were present, and among them, and as wide awake as ever, Prof. Wm. Van Antwerp. "Van's" eyes are open and that is why he discovered the digestive properties of the pawpaw, a medicine which ought to be far more used in general, as well as in dental, surgery.

But time and space forbid pointing out all the good fellows on hand. Many more of you should have been there to see them. Your loss is without remedy, but don't suffer another such, if it is possible to avoid it. Be at Toledo. Begin to write your volunteer essay to-night, and if it tries your patience to keep it, send it to the JOURNAL, and write another.

DR. JOHN P. HOLMES.

PEOPLE die. We all must. But not till November did we know that our friend and former pupil, DR. JOHN P. HOLMES, of Macon, Ga., had been called home. The event occurred the second of September. We would have been glad to add our sympathy to that given his sorrowing friends and bereaved family at a proper date. But for some reason we failed to get any notice of the sad fact, and what we would have said then would now sound like an effort to freshen grief.

We recall his manly form and animated countenance as he sat understandingly in the class, taking in every thought expressed; for it was not he who thought chemistry a "dry study."

We can not remember all our pupils as we do him. Without forwardness, modest as a maiden, it was his nature to impress himself on those about him. His image would be hard to erase

from our memory. But though then he was full of young manhood, and we *broken down*—not worn out, in the mysterious providence of Our Father in Heaven, he has gone to his reward, and we are left to toil on till called. Not often are we so surprised by such visitations.

PLEASANT.

THE State Society meeting at Chillicothe, though not very largely attended, contained eighteen of our former pupils. Looking at the character, standing and prospective, as well as present usefulness of these, we feel that we have not lived altogether in vain; for, while not claiming much, it is quite probable that we had something to do in the formation of their professional characters. We were delighted to see them—especially to see them there; and they are first class hypocrites, and good actors, if the pleasure was not mutual. The apostle beloved says, “I have no greater joy than to hear that my children walk in truth.” Seeing our pupils (professional children) walking in and increasing the light of professional truth likewise gives us joy.

Societies.

“Wherewith one may edify another.”

OHIO STATE DENTAL SOCIETY.

CONSTITUTION.

(Adopted October, 1885.)

ARTICLE I. NAME.—This association shall be known as the Ohio State Dental Society.

ARTICLE II. ITS AIMS AND OBJECTS are as follows: The elevation of the standard of professional education; the advancement and cultivation of dental science and literature and the protection of the public from the evils of empiricism. The promotion of the honor, usefulness, and interests of the profession and mutual fellowship and good feeling.

ARTICLE III. MEMBERSHIP. *Section 1.*—The membership of this society shall consist of two classes namely; active and honorary.

Section 2.—Active Members. Any honorable practitioner of dentistry in the state of Ohio, who is a graduate of a reputable dental college, or is in possession of a certificate of qualification from the Ohio State Board of Dental Examiners, may become an active member of this society.

Section 3.—Honorary Membership. Active members who have honorably retired from practice, and reputable practitioners of dentistry from other states or foreign countries who are distinguished for their scientific and professional attainments, and by their labors on behalf of dental science.

Section 4.—Anyone eligible to active membership shall not be proposed for honorary membership.

ARTICLE IV. OFFICERS. *Section 1.*—The officers of this society shall consist of a President, two Vice Presidents, Recording Secretary and Treasurer.

Section 2.—Board of Directors. The management of this society shall be by a board consisting of twelve active members and the officers of the society as named in section I, of this article, the whole number of the board being seventeen.

Section 3.—Board of Examiners. A Board of Examiners consisting of five active members shall be elected annually to serve for three years or until their successors are chosen.

ARTICLE V. *Section 1.*—Election of Officers. The officers named in section 1 of article IV, shall be elected annually, by ballot, at a regular meeting. A majority of all votes cast shall be necessary to a choice.

Section 2.—The Board of Directors shall be elected annually, by ballot, at a regular meeting. A majority of all votes cast shall be necessary to a choice. They shall be divided into three classes of four each. The first class shall serve one year, the second class shall serve two years, the third class shall serve three years, and thereafter the successors for each class shall be elected for three years. The officers of the society as named in section 1 of article IV shall be the officers of this board.

Section 3.—Board of Examiners. This board shall consist of five active members and shall be divided into three classes. The first class consisting of one, shall be elected for one year, the

second class, consisting of two, shall be elected for two years, and the third class, consisting of two, shall be elected for three years. A majority of all votes cast shall be necessary for a choice. They shall serve for one, two and three years, or until their successors have been elected.

ARTICLE VI. Election of Members. *Section 1.*—All elections shall be by ballot.

Section 2.—The applicant for membership shall state, on a printed form, the name in full, place of residence, post-office address, county and state; whether graduate and from what college or university, name the titles, if any; if licensed, by what authority; how long in continual practice and where.

Section 3.—All applications for membership shall be presented by members of this society to the Committee on Membership, and if the applicant be reported favorably, through the Board of Directors, he or she may be elected; four-fifths of all the votes cast shall be necessary to elect.

ARTICLE VII. Standing Committees. The Board of Directors shall annually appoint the following standing committees, each shall consist of three members. They may be chosen from the members of the board or otherwise—

1. Committee of Arrangements.
2. On Publication and Voluntary Essays.
3. On Membership.

They shall respectively perform the duties designated in the by-laws.

ARTICLE VIII. Amendments. All proposed changes in, or amendments to, this constitution shall be in writing and presented at a regular annual meeting, signed by five active members, and such alterations or amendments shall be noted in the announcements of the next annual meeting, and shall not be acted upon until that time and then adopted only by a three-fourths vote of the active members present.

BY-LAWS.

ARTICLE I. DUTIES OF OFFICERS.

Section 1. President.—The President shall preside at all meetings of the Society and the Board of Directors. He shall

give a deciding vote in all cases of a tie, except in the election of officers, call special meetings upon the written request of nine (9) members of the Board of Directors and perform such other duties as may from time to time be assigned to him.

Section 2. Vice President.—In the absence of the President he shall preside at the meetings of this Society and of the Board of Directors and perform all other duties incumbent upon the President.

Section 3. Second Vice President.—In the absence of both President and Vice President he shall preside at the meetings of this Society and of the Board of Directors and perform all other duties appertaining to the office of President.

Section 4. Recording Secretary.—The Recording Secretary shall keep an accurate account of the proceedings of the meetings of the Society, issue announcements and notices of meetings and have the custody of the seal of the Society. He shall take charge of all letters and communications addressed to the Society and shall conduct the correspondence as may be directed by the Board of Directors. He shall notify all officers of their election, committees of their appointment and of the subjects referred to them; keep the manuscript Constitution and By-Laws and Code of Ethics of the Society. He shall also keep a record of the membership, including resignations and other changes and perform such other duties as may from time to time be assigned to him.

Section 5. Treasurer.—The Treasurer shall collect all dues, keep an exact account of all receipts and expenditures and the vouchers therefor; notify all members of arrearages and present a written report of the condition of his official affairs at each annual meeting or on the order of the Board of Directors. He shall pay out money only on the order of the President countersigned by the Recording Secretary.

Section 6. The Board of Directors.—This Board shall constitute a court for the trial of members for the violation of the Code of Ethics adopted by this Society, the Constitution and By-Laws, gross immorality or unprofessional conduct or any other sufficient cause. Charges against members shall be made in writing addressed to the President. He on receiving them shall call a meeting of the Board of Directors to investigate the same and the evidence thereof. If a majority of the Board, after such investigation, shall be of the opinion that the charges are well

founded, they shall serve a copy on the accused and appoint a day for hearing his defence, of which day he and the party making the charges shall have at least ten (10) days notice. If the accused in person, or by counsel who must be an active member of this Society, having had a fair opportunity to hear the evidence against him and to make his defence, shall be found guilty by a two-thirds ($\frac{2}{3}$) vote of the Board, said Board shall affix and execute the penalty at the next regular meeting, subject to an appeal to the Society. If after due notification the accused party, or his counsel, shall fail to appear at the time and place of trial, without satisfactory excuse tendered at the time, he shall be considered as admitting the charges against him and shall be liable to sentence accordingly. The Board shall furthermore manage the business part of the Society, take cognizance of the conduct of members and perform the duties usually assigned to a committee on ethics.

Section 7. Board of Examiners.—This Board shall perform the duties as specifically prescribed by the laws of the State of Ohio.

ARTICLE II. DUTIES AND PRIVILEGES OF MEMBERS.

Section 1. Active Members shall, on election, sign the Constitution and the By-Laws and the Code of Ethics, and only active members shall have the right to vote and hold office.

Section 2. Honorary Members shall be exempt from all payment of dues and shall be entitled to the privileges of the floor at regular meetings.

ARTICLE III. FEES AND ANNUAL DUES.

Section 1.—The application for active membership must be accompanied by a fee of three dollars (\$3.) which includes first year's dues and every active member shall pay an annual fee of two dollars (\$2.) in advance, and no member subject to annual dues shall be permitted to speak on any subject until his dues are paid to the treasurer. Those in arrears for dues shall not be eligible for office, or vote on any subject before the society; and in case the dues of any active member remain unpaid, at the close of the second annual meeting thereafter, the name of such delinquent shall be stricken from the list of active members without further action.

Section 2.—*Honorary Members* are exempt from all fees or dues.

ARTICLE IV. APPROPRIATIONS.

No money of the Society shall be appropriated, for any purpose, without the approval of the Board of Directors, and then only by a vote of two-thirds ($\frac{2}{3}$) of the members present, provided however, that appropriations for all current and necessary expenses of the Society, may be passed by a majority vote of the active members present.

ARTICLE V. ANNUAL MEETING.

The annual meeting of the Ohio State Dental Society (as re-organized) shall be held on the last Wednesday of the month of October, at ten (10) o'clock A.M., continuing to final adjournment, at such place as the majority of its members may determine.

ARTICLE VI. QUORUM.

Seven (7) members of the Board of Directors and five (5) active members shall constitute a quorum at any annual meeting of the Society.

ARTICLE VII. ORDER OF BUSINESS.

1. Calling the roll and payment of dues.
2. Reading of the records of the previous meeting.
3. Report of Committee on Arrangements.
4. Report of Standing Committees.
5. Report of Special Committees.
6. Unfinished Business.
7. New Business.

ARTICLE VIII. RULES OF ORDER.

Section 1.—No one shall be permitted to address the Society until he has been recognized by the chair and his name pronounced, nor shall any one speak more than twice on any subject, nor longer than fifteen (15) minutes in all, unless by consent.

Section 2.—A member called to order while speaking shall take his seat and the debate be suspended until the point of order is decided by the President.

Section 3.—All questions of order shall be decided by the chair, subject to an appeal, which shall be determined by a majority vote without debate.

Section 4.—All resolutions and amendments shall be offered in writing.

Section 5.—All papers presented and read before the Society, become the property of the body, and the Recording Secretary shall be the responsible custodian thereof.

Section 6.—Any member may call for a division on a question when the sense will admit of it.

Section 7.—All questions not provided for by the rules shall be determined by parliamentary usage as set forth in Cushing's Manual.

ARTICLE IX.

All proposed changes in or amendments to these By-Laws shall be in writing, presented at a regular meeting signed by five (5) active members; and such alterations or amendments shall lie over until the next regular meeting, and not be acted upon until that time, and then adopted only by a three-fourths ($\frac{3}{4}$) vote of the active members present. The Rules and By-Laws may be suspended for the time being by a unanimous vote.

SCHEDULE OF QUESTIONS

FOR PRELIMINARY EXAMINATIONS, SESSION 1885-6.

[Recommended by the National Association of Dental Faculties. See page 432 of the JOURNAL.]

- A. Write your name in *full*.
- B. Give the date of your birth, and give day, month, and year.
- C. Where were you born? Give Town, County, and State.
- D. Where is your present residence? Give Town and State.
- E. What educational advantages have you had? Name the schools you have attended, and the time spent in each.
- F. What branches have you studied and to what extent have you pursued them?
- G. In what other occupation have you been engaged than that of student, and how long were you thus employed?
- H. When did you commence the study of dentistry? Give month and year.
- I. How many months of actual medical and dental study have you had to this date?
- J. Have you attended a course of lectures at any dental or medical school or college? If so, at what one, and when?
- K. With what preceptor or preceptors have you studied? Give his name and present residence, as fully as possible.

Grammar.

1. Define grammar, syntax, etymology, noun, and verb.
2. In what ways does the English differ from the German language?
3. Parse: Tell me not in mournful numbers,
Life is but an empty dream.
4. Give six words of German and six of Latin origin.
5. Construct sentences containing the following words: ambitious, horizontal, contiguous, differ, contemporary.

Arithmetic.

6. Define Arithmetic, Subtraction, Fraction, and Discount.
7. Divide 13276010 by 55 and multiply the quotient by 165.
8. How many sq. ft. are there in $27\frac{3}{4}$ acres?
9. What will be the cost of that quantity of land at \$1.75 per acre less 6 per cent. discount?
10. Reduce 7 tons, 15 cwt., 3 qrs., 10 lbs. to ounces.

Geography.

11. Explain the following terms: Continent, island, strait, isthmus.
12. What is the difference between physical and political geography?
13. Describe the course of the Colorado, the St. Lawrence, and the Hudson rivers.
14. What are the principal sea-ports on the Pacific coast of North and South America?
15. What are the principal chains of mountains in the United States? In what direction do they run?

Modern History.

16. Name the President of the United States and chief European monarchs in 1850.
17. When and by whom were fought the battles of Trafalgar, Waterloo, Sadowa, Sedan, and Gettysburg?
18. When were railways, canals, and the electric telegraph introduced into the U. S.?
19. Who were William Pitt, Lafayette, Washington Irving, Henry Clay, and Daniel Webster?
20. What territories of the U. S. have been acquired by purchase? When and from whom?

Political Topics.

21. What officials constitute the President's Cabinet?
22. What is necessary for the passing of a bill in Congress?
23. What taxes are levied on the inhabitants of the U. S. and by what authorities?
24. What are the duties of the governor of a state?
25. Name any three amendments to the Constitution of the U. S.? When were they accepted?

NEVER TRUST TO APPEARANCES; it is the prosperous dentist that looks most down in the mouth.

CONNECTICUT VALLEY DENTAL SOCIETY.

At the annual meeting of the Connecticut Valley Dental Society, held in Springfield, Mass., Nov. 5 and 6, 1885, the following officers were elected:

President, Dr. E. A. Stebbins, Shelburne Falls, Mass.; 1st Vice-President, Dr. I. N. Davenport, Northampton, Mass.; 2nd Vice-President, Dr. F. W. Williams, Greenfield, Mass.; Secretary, Dr. Geo. A. Maxfield, Holyoke, Mass.; Assistant Secretary, Dr. A. J. Nims, Turners Falls, Mass.; Treasurer, Dr. W. H. Jones, Northampton, Mass.

EXECUTIVE COMMITTEE.

Dr. L. C. Taylor, Hartford, Conn.; Dr. J. P. Parker, Bellows Falls, Vt.; Dr. W. F. Andrews, Springfield, Mass.

GEO. A. MAXFIELD, D.D.S., *Sec'y.*

CENTRAL ILLINOIS DENTAL SOCIETY.

At the annual meeting, held at Bloomington in October, the following officers were elected:

President, C. R. Taylor, of Streator; Vice-President, S. W. Lakin, of Eureka; Secretary, W. A. Johnston, of Peoria; Treasurer, J. M. Fishburn, of El Paso; Executive Committee, E. B. Call, Peoria; J. A. W. Davis, Galesburg; G. D. Sitherwood, Bloomington.

The next annual meeting will be held in Peoria.

Our Aftermath.

WILLIAM BENJAMIN CARPENTER, M.D., L.L.D.,

LONDON, ENGLAND.

WILLIAM BENJAMIN CARPENTER, M.D., L.L.D., F.R.S., F.L.S., F.G.S., the eminent English physician, physiologist, and writer on scientific subjects, died in London, November 9th, from the effects of terrible burns caused by the upsetting of a lamp while he was taking a vapor bath for rheumatism. Dr. Carpenter who was in the seventy-third year of his age, was born at Bris-

tol in 1813. He studied medicine, and was graduated M.D. from the University of Edinburgh in 1839, when he began the practice of his profession in Bristol. He soon resolved, however, to devote himself wholly to scientific and literary pursuits, and in 1843 removed to London, where his writings at once attracted attention, and he was appointed Examiner in Physiology and Comparative Anatomy in the University of London, and Professor of Medical Jurisprudence in University College. He held these positions until 1856, when he was appointed Registrar of the University of London. In 1861 the Council of the Royal Society awarded to Dr. Carpenter the royal medal for his contributions to physiological science. From 1868 to 1870 he took a principal part in the expeditions fitted out by the Government of Great Britain for the exploration of the deep sea, which yielded results of the greatest value to physical and biological science, and it was at his suggestion that the Challenger was afterwards dispatched to prosecute similar researches more extensively. The honorary degree of L.L.D. was conferred upon him by the University of Edinburgh, in 1871. Among his more widely known scientific works are: "The Microscope and its Revelations," "Principles of General and Comparative Physiology," "Principles of Human Physiology," "A Manual of Physiology," "Principles of Mental Physiology," and an "Introduction to the Study of the Foraminifera." He was the editor for many years of the *British and Foreign Medico-Chirurgical Journal*.—*The Med. Rec.*

WHAT TO DO IN CASES OF POISONING.

BY WILLIAM MURRELL, M.D., F.R.P.C.

TO AVOID the complexity of the subject and the perplexity of diagnosis, a search has been made for that philosopher's stone, a "multiple antidote;" that is, a preparation which will neutralize the toxic action of all or most all the active poisons. Two such are given as very nearly answering the purpose.

One of these is the iodide of starch, which is efficacious in poisoning by sulphuretted hydrogen, the alkalies, the alkaline sulphides, and especially the alkaloids, with which iodine forms an insoluble compound. The other is given as follows: Saturated solution of sulphate of iron, 100 parts; water, 800 parts; calcined magnesia, 88 parts; purified animal charcoal, 40 parts.

The iron solution should be kept separately, and the magnesia and charcoal mixed in a bottle, and the whole well shaken together. It may be administered *ad libitum*, a wineglass or more at a time. It is said to render preparations of zinc, arsenic, and digitalis absolutely inert, and to partly neutralize the action of mercury, morphia, and strychnine. It has, however, no action on the alkaloids, and none on phosphorus, antimony, or hydrocyanic acid.

It should ever be remembered that, as Dr. Murrell tersely and correctly puts it, "all rational treatment of cases of poisoning is founded on a correct appreciation of the physiological action of drugs." It is the same with reference to diagnosis. "There is no royal road," he says; "the only way to

arrive at a correct conclusion is to utilize your knowledge of the physiological action of drugs." Then you will always know "what to do in cases of poisoning."—*Med. Record.*

THE BEES AND APOLLO: A MEDICO PHARMACEUTICAL FABLE.—Once upon a time the busy bees were gathering honey from a flowery field on famed Hymettus. Suddenly one bee was heard to buzz much more loudly than the rest of his companions, who, upon listening, heard that he had found a new process for extracting a superior honey of remarkable medical properties. He had also, at the same time, invented a very ingenious way by which he could with comparative ease make his buzz sound four times as large as that of the ordinary bee. By means of these inventions, he soon disposed of large quantities of honey at a high price. But one day, Apollo, who was experienced in the matter of honey and its medical properties, came that way, seeking some good sample for the use of his friend Diana, who was a little ill. He looked at the new preparation, which was put up in soft capsules and called "honeyine," and at another kind which was put up in chocolate tablets and called "honeyidea." He also listened to the new buzz. "I think," he said finally, "that the buzz is much more wonderful and effective than the honey; I will take it to Diana, who is fond of buzzing." Some days later, Æsop, on hearing this story, remarked that the moral which he would add was, that the art of advertising a new medicinal preparation is of more importance than the art of making it.—*Boston Medical and Surgical Journal.*

DENTIST'S LEG.—A peculiar sensation of numbness, or "pins and needles," in the extremities is frequently experienced by dentists. This condition Dr. George Johnson considers to be due to the combined influence of perverted nerve-function, directly due to a mechanical impediment to the circulation through the rigidly contracted muscles and their associated nerves, and to direct compression of the nerves by the firmly contracted muscles. This combination is found in dentists who stand fixed and firm in one position for long periods of time. The obvious means of prevention and of cure consist in rest for the overstrained limb, or such a frequent change of position as is equivalent to a certain amount of rest. Standing in one position is notoriously more fatiguing than walking, and for the obvious reason that while in standing one set of muscles is in a constant state of active contraction, the circulation through them being thereby retarded and enfeebled, walking involves alternate contraction and relaxation of the muscles, with an invigorated and quickened circulation.—*The Lancet.*

THE MECHANISM OF A LEECH-BITE.—M. Carlet states that the bite of a leech is effected by the three jaws, which bury themselves in the skin by a movement of separation, at the same time opening the œsophagus in the form of a funnel. When the top of this funnel is filled with blood, the jaws close and force the fluid along by a sort of piston movement. He asserts that there are no peristaltic movements of the œsophagus, but that the blood is driven along by the opening and closing of the jaws.—*Med. Record.*

